



# RPD

LOT 3–5 on RP601157 LOT 1–2 on RP605704 ROCKHAMPTON REGIONAL COUNCIL



D.A ISSUE

DEVELOPMENT ASSESSMENT

APPROX.	SITE	AREA	_	2,014.5m2

PROP. LOT 1 INCLUDING ACCESS EASEMENT

PROP. LOT 2 INCLUDING ACCESS EASEMENT – 950m2

- 1,064.5m2

IN EACH ON THE 6 57 RP60383 67 RP60383 ALC: NOT A REAL PROPERTY OF 193627 **ROCKHAMPTON REGIONAL COUNCIL** AMENDED PLANS APPROVED 11 November 2024 DATE These plans are approved subject to the current conditions of approval associated with **Development Permit No.:** D/156-2023 Dated: 26 February 2024

roject Description PROPOSED MIXED USE 55 GEORGE ST, ROCKH	DEVELOPMENT IAMPTON	PROPOSED LOT PLAN				
Scale 1:200@A1 / 1:400@A3	Approved	Drawing Number	Revision			
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# ARCHITECTURAL DA DRAWINGS PROPOSED MIXED USE DEVELOPMENT 65 GEORGE ST, ROCKHAMPTON



D	DA ARCHITECTURAL DRAWINGS			
DRG No.	DRAWING TITLE			
DA00	COVER PAGE			
DA01	EXISTING SITE PLAN			
DA02	PROP. SITE PLAN			
DA03	BUILDING ELEVATIONS & PERSPECTIVES			
DA04	BUILDING ELEVATIONS & PERSPECTIVES			
DA05	BUILDING ELEVATIONS & PERSPECTIVES			
DA06	BUILDING ELEVATIONS & PERSPECTIVES			
DA07	SITE ELEVATIONS & PERPECTIVES			
DA08	PROPOSED LOT PLAN			
DA09	T1 SIGNAGE PLAN			

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15.11.2023	ΤM	DA ISSUE	SS
14.12.2023	ΤM	RESPONSE TO COUNCIL I.R	SS

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65 GEORGE ST, R	OCKHAMPTON					
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APPROVED PLANS

**ROCKHAMPTON REGIONAL COUNCIL** 

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**ROCKHAMPTON REGIONAL COUNCIL** AMENDED PLANS APPROVED 11 November 2024 DATE These plans are approved subject to the current conditions of approval associated with **Development Permit No.:** D/156-2023 Dated: 26 February 2024

oject Description PROPOSED MIXED USE 5 GEORGE ST, ROCKH	DEVELOPMENT IAMPTON	PROPOSED SITE PLAN				
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project concept to completion



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# EXAMPLE FINISHES

FINAL PAINT COLOURS SUBJECT TO CHANGE



Project Description PROPOSED MIXED USE DEVELOPMENT		Drawing Title BUILDING ELEV	ATIONS 3	Ş.	
55 GEORGE ST, ROCKHAMPTON		PERSPECTIVES			
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CAMBRIDGE STREET

**ROCKHAMPTON REGIONAL COUNCIL** These plans are approved subject to the current

PAINT FINISH RED PAINT FINISH BLACK PAINT FINISH GREY Drawing Title Project Description BUILDING ELEVATIONS & Appr PROPOSED MIXED USE DEVELOPMENT SS PERSPECTIVES  $\bigcirc$  65 GEORGE ST, ROCKHAMPTON SS SS Scale @A1 As indicated Date AUGUST 2023 Job Number - Drawing Number Revision

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🗆 fast food restaurant design	VERVE BUILDING DESIGN and must not be	А	20.10.2023	TM	DA ISSUE		
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# EXAMPLE FINISHES FINAL PAINT COLOURS SUBJECT TO CHANGE





VERTICAL FC CLADDING



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Job Number - Drawing Number



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Project Description

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65 GEORGE ST, ROCKHAMPTON

Date AUGUST 2023

Approved By SS



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# CAMPBELL LANE

# **ROCKHAMPTON REGIONAL COUNCIL** APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with **Development Permit No.:** D/156-2023 Dated: 26 February 2024





# RPD

LOT 3–5 on RP601157 LOT 1–2 on RP605704 ROCKHAMPTON REGIONAL COUNCIL



ISSUE

DEVELOPMENT ASSESSMENT

# APPROX. SITE AREA - 2,014.5m2

D.A

PROP. LOT 1 INCLUDING ACCESS EASEMENT

PROP. LOT 2 INCLUDING ACCESS EASEMENT – 950m2

- 1,064.5m2



PROPOSED MIXED USE 65 GEORGE ST, ROCKH	DEVELOPMENT AMPTON	PROPOSED LOT PLAN		
Scale 1:200@A1 / 1:400@A3	Approved	Drawing Number	Revision	
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Version: 1, Version Date: 08/10/2024

CODE	SPECIES
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#### PROPOSED STREET TREES

1.1 Xanthostemon chrysanthus

#### PROPOSED FEATURE SHADE/ SCREEN TREE

2.1	Elaeocarpus eumundii
2.2	Harpullia pendula

#### \*\*PLANT CONTAINER SIZE:

100L 100 Litre container stock min 45L 45 Litre container stock min

The spacing of plants shown on plan have been derived as a compromise between growth rate, anticipated size, and the ability to provide a good vegetative cover within a reasonable space of time.



ANDREW GOLD LANDSCAPE ARCHITECTURE PO BOX 5220, MT GRAVATT EAST QLD 4122 T 07 3420 0006 M 0405 389 243 E andrew@agla.com.au

PROPOSED FAST FOOD DEVELOPMENT 65 GEORGE STREET, ROCKHAMPTON

JOB NUMBER SHEET NO. 23.231 2 DATE DRAWN BY 30/10/23 AG / PD ISSUE D

# **PROPOSED PLANTING SCHEDULE**

	COMMON NAME	SIZE**	SPACING(m)	HEIGHT(m)	WIDTH (m)
	Golden Penda	45L	as shown	10	6
S	Smooth Leaved Quandong Tulipwood	100L 100L	as shown as shown	8 10	4 6

Min. height at time of planting: 2.4m Min. height at time of planting: 1.9-2.3m

# **ROCKHAMPTON REGIONAL COUNCIL APPROVED PLANS**

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SPECIES CODE

PROPOS	SED SHRUBS AND GROUNDCOVERS
3.1	Allamanda cathartica Sunee
3.2	Callistemon Little John
3.3	Carissa grandiflora Desert Star
3.4	Ixora chinensis Coral Fire
3.5	Ixora chinensis Orange Dwarf Mai
3.6	Russelia equisetiformis Tangerine
3.7	Westringia Flat n Fruity
3.8	Westringia Zena
3.9	Xanthostemon chrysanthus Little

#### PROPOSED DETENTION BASIN PLANTING

wsud-plant-database/bioretention-plants

Carex appressa Ficinia nodosa (Syn. Isolepis nodosa) Imperata cylindrica Lepidosperma laterale Lomandra hystrix Lomandra longifolia

#### \*\*PLANT CONTAINER SIZE:

200mm 200mm dia minimum pot size

The spacing of plants shown on plan have been derived as a compromise between growth rate, anticipated size, and the ability to provide a good vegetative cover within a reasonable space of time.

ANDREW GOLD LANDSCAPE ARCHITECTURE PO BOX 5220, MT GRAVATT EAST QLD 4122 T 07 3420 0006 M 0405 389 243 E andrew@agla.com.au

PROPOSED FAST FOOD DEVELOPMENT 65 GEORGE STREET, ROCKHAMPTON

SHEET NO. JOB NUMBER 23.231 DATE DRAWN BY 30/10/23 AG / PD ISSUE D

# **PROPOSED PLANTING SCHEDULE**

COMMON NAME SIZE\*\* SPACING(m) HEIGHT(m) WIDTH(m) Dwarf Yellow Allamanda 200mm 0.8 12 Dwarf Bottlebrush 200mm 0.8 0.9 Desert Star 200mm 0.7 200mm 0.8 Ixora 0.8 0.7 Ixora Dwarf 200mm Falls Tangerine Falls 200mm Prostrate Native Rosemary 200mm 0.3 1 Dwarf Rosemary Dwarf Golden Penda 0.9 200mm 200mm 0.7 Goldie 0.8

Proposed species taken from Water by Design WSUD plant list https://waterbydesign.com.au/wetland-plants https://waterbydesign.com.au/

Tall Sedge Knobby Club-rush Blady Grass Variable Sword-sedge River Mat-rush Spiny-headed Mat Rush



These plans are approved subject to the current conditions of approval associated with Development Permit No.: D/156-2023

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Dated: 26 February 2024

25<sup>th</sup> October

# Stormwater Management Plan and **Engineering Services Report**

**Proposed Food Outlets Development** Stages 1 and 2 Cnr Cambridge Street and George Street Rockhampton QLD Project No 230118C Rev A

**ROCKHAMPTON REGIONAL COUNCIL APPROVED PLANS** 

These plans are approved subject to the current conditions of approval associated with Development Permit No.: D/156-2023 Dated: 26 February 2024

NIGEL FLETCHER & ASSOCIATES PTY LTD

PO BOX 7217 SOUTHPORT PARK QLD 4215 M : 0423 782 127 E : nigel@nigelfletcherassociates.com.au

ENGINEERS - PROJECT MANAGERS

# Proposed Food Outlet Development

# Cnr Cambridge Street and George Street Rockhampton QLD

# Stormwater Management Plan &

# **Engineering Services Report**

25<sup>th</sup> October 2023 Issued & Approved Nigel Fletcher & Associates Pty Ltd

Nigel Fletcher BE, MIEAust, NPER, RPEQ 10888 Director

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# Appendices

- Appendix A Architectural Plans, Verve Building Designs
- Appendix B Vision Surveys 23641-CD01
- Appendix C Engineering Plans
- Appendix D Rational Method Catchment Calculations
- Appendix E Atlan Product Details

## 1. INTRODUCTION

EPO Developments Pty Ltd has engaged Nigel Fletcher & Associates Pty Ltd to prepare a Stormwater Management Plan and Engineering Services Report to support the development application for Food Outlet Developments at Rockhampton Qld.

The site is located within the Rockhampton Regional Council Local Government Area and it is understood that this document will be assessed against the development provisions of the current Planning Scheme. This document addresses the relevant stormwater and engineering services aspects of performance outcomes in the Council's Planning Scheme.

## 2. EXISTING CONDITIONS

#### 2.1 Site Description

The existing site currently consists of three residential dwellings with driveway accesses off George Street and Cambridge Street as shown on the Site Survey Plan provided in Appendix B. The site currently has 5 lots in place over the site.

The site falls towards the southeastern corner of the development site.

#### Site Details

Location	Rockhampton
Address	Lots 1 &2 RP605704 and Lots 3, 4 & 5 RP601157
Development Site	2,014 m <sup>2</sup>
Proposed Use	Two Food Outlets with Drive Thrus and Parking Stage 1 – Tenancy 1 Lot 1 Stage 2 – Tenancy 2 Lot 2
Local Authority	Rockhampton Regional Council

The existing land use areas are provided in Table 3.1 based on the Pre-Development Catchment Plan SKC100\_B in Appendix C

#### **Table 2.1 Existing Site Catchment**

Land Use	Catchment Area	%
Impervious Area –	614.6 m <sup>2</sup>	30.5 %
Pervious Area –	1399.7 m <sup>2</sup>	69.5 %
Total	2,014.3 m <sup>2</sup>	

## 2.2 Existing Site Drainage Networks and Legal Point of Discharge

The roof runoff from the existing dwellings on the site appears to either be to the individual lot The yards and driveways generally sheet flow to the southeastern corner towards the Cambridge Street and Campbell Lane Intersection. The existing Legal Point of Discharge for the development site is identified as the kerb and channel in Cambridge Street which has a kerb inlet pit at the corner of Campbell Lane.

It is proposed that the legal point of discharge be the existing Manhole at the corner of Campbell Lane and Cambridge Street at the southeastern corner of the site. This location has been chosen as the existing services in the Cambridge Street verge are likely to conflict with the site discharge pipe. The lower discharge point in the nominated access hole will improve the connectivity options and ensure that the site level is kept as low as possible and the import of fill volume is minimised.

## 2.3 Flooding and Overland Flow Paths

A review of Rockhampton Regional Council's Flood Viewer Flood Check concludes that the proposed site is not impacted by Riverine Flood Hazard Overlay as shown in Figure 2.1. There is however minor ponding identified on the Local Catchment Flood Overlay map reproduced in Figure 2.2. It is therefore concluded that the site is unaffected by flooding.



Figure 2.1 Riverine Flod Hazard Overlay

Figure 2.2 Local Catchment Flood Overlays

# 3. PROPOSED DEVELOPMENT

The proposed food outlet developments cover the whole of the site with a single access driveway off Cambridge Street. The development is proposed to be carried out in two Stages and over two lots.

Stage 1 Proposed Food Outlet Tenancy T1 on the George Street frontage with shared access driveway, carparking, loading area and drive thru. Stage 1 will include the provision of a fenced detention basin sized to service both Lots 1 and 2 of the development.

Stage 2 Proposed Food Outlet Tenancy 2 on the Cambell Lane side of the site fronting Cambridge Street with shared access driveway, carparking, loading area and drive thru.

The proposed site layout, staging and shared areas are shown on the architectural Site Plan prepared by Verve Building Design in Appendix A.

The breakdown of the proposed development land use is provided in Table 3.1 and shown on the Post Development Catchment Plan SKC101\_B in Appendix C.

The site stormwater runoff from the new development on site will be directed to the shared detention basin and discharged to the existing Stormwater access hole at the corner of Campbell Lane and Cambridge Street as shown on Drawing SKC300\_B in Appendix C.

Land Use	Catchment Area	%
Impervious Area – Roof	349.6 m²	85.8 %
Impervious Area – Driveway & Paths	1,378.9 m <sup>2</sup>	
Pervious Area – Landscape	285.8 m <sup>2</sup>	14.2%
Total Site Area	2,014 m <sup>2</sup>	

# 4. HYDRAULIC ASSESSMENT

It is clear from an assessment of the Pre and Post development catchment land use areas provided in Tables 2.1 and 3.1 that the percentage impervious increases as a result of this development and the proposed development peak flows from the site are therefore likely to increase. A detention tank is proposed to meet the requirement of RRC Planning Scheme to avoid net worsening of stormwater peak discharges and run off volumes from the development.

## 4.1 DRAINS Parameters

The peak stormwater discharges were analysed for the existing and proposed development scenarios using the Urban Drainage software DRAINS. Q1, Q5, Q10, Q20, Q50 and Q100 storm events were assembled and analysed for storm durations from 5 minutes to 4.5 hours to establish the peak discharges for each storm event.

Rainfall data has been sourced from BOM using 2016 data.

The ILSAX based hydraulic model was used to calculate the above peak discharges for the existing and proposed development condition.

Based on Council's policy all post development flows are to be restricted to the predevelopment site discharge for all events up to the 100 yr ARI rainfall event. It was established through use of the DRAINS model that a detention tank is required to capture and detain flows necessary to achieve no worsening of the pre-development peak discharge from the site in all events and durations assessed. The results of this analysis are presented in Table 4.1 and the peak flows quoted are the total site discharge flows through the detention tank outlet and by pass area to the stormwater pit at the corner of Campbell Lane and Cambridge Street.

Storm Event ARI	Existing site (m³/s)	Proposed Development (m³/s)	Difference (m <sup>3</sup> /s)
1	0.020	0.020	0.000
5	0.034	0.026	-0.008
10	0.050	0.048	-0.002
20	0.065	0.063	-0.002
50	0.087	0.075	-0.012
100	0.107	0.080	-0.027

Table 4.1 Existing and Propo	sed Development Peak Flows	with the Adopted Detention

The above table of results is based on a detention tank using a open basin with a perimeter retaining wall and safety fence with the overall dimensions of 7.5 m long x 4m wide. The discharge is controlled by an orifice plate attached to the wall of the outlet as follows.

Total Basin Volume to TWL 27 m<sup>3</sup> Base RL 10.63 m Outlet Control – 115 mm diameter orifice at IL 10.63 m 190 mm diameter orifice at IL 11.30 m 180 mm diameter orifice at IL 11.40 m Table 4.1 demonstrates that the proposed detention tank will mitigate the peak discharges for the storm events assessed and will not result in actionable nuisance to properties downstream of the site. The proposed stormwater layout and detention Tank details are provided in the Siteworks and Stormwater Plans and details on Drawings SKC300\_B and SKC301\_B in Appendix C.

## 4.2 Comparison of Rational and ILSAX Derived Peak Flows

Rational Method flows were developed in accordance with QUDM as presented in Table 4.2 and provides a favourable comparison between the Rational Method and ILSAX Flows for the existing site condition was obtained.

Storm Event ARI	ILSAX Peak Flow (cumecs)	Rational Method Peak Flow (cumecs)	Difference
1	0.020	0.025	+ 0.005
5	0.034	0.045	+ 0.011
10	0.050	0.055	+ 0.005
20	0.065	0.067	+ 0.002
50	0.087	0.101	+ 0.014
100	0.105	0.113	+ 0.008

## Table 4.2 Comparison of Peak Flows Rational/ ILSAX Predevelopment Conditions

# 5. STORMWATER QUALITY

## 5.1 Construction Phase

The typical pollutants during the Construction Phase are shown in Table 5.1

Construction Pollutant	Sources								
Litter	Paper, construction packaging, food								
	packaging, cement bags, off cuts								
Sediment	Unprotected exposed soils and stockpiles								
	during earthworks and building								
Hydrocarbons	Fuel and oil spills, leaks from construction								
	equipment								
Toxic Materials	Cement slurry, asphalt primer, solvents,								
	cleaning agents and wash water								
pH Altering Substances	Acid sulphate soils, cement slurry and wash								
	water								

## **Table 5.1 - Construction Phase Pollutants**

The ESC Risk from these pollutants is low and appropriate erosion and sedimentation measures have been identified within the Preliminary Bulk Earthworks and Erosion & Sedimentation Control Plans, Section and Details provided on drawings SKC200\_B, SKC201\_B SKC250\_B and SKC251\_B in Appendix C to manage these risks on site in accordance with the relevant IECA Guidelines during the construction works.

## **Monitoring the Site**

Visual and monitoring inspections will be carried during the construction phase particularly prior to and after rainfall events to assess the performance of the ESC measures, collect samples of site discharge water quality and inspect and repair any damaged control measures. The Contractor will document the results of water quality tests at the site outlets and record any damage and repair to the erosion and sediment control measures.

Where the water quality discharge does not meet the above water quality objective during the construction phase additional treatment measures will be implemented to address the source of the relevant pollutants.

## 5.2 Operational Phase

The main sources of pollutants proposed for this site are the general site runoff from the developed areas of the site.

The site area is 2,014 m<sup>2</sup> and as such does not trigger compliance with the State Planning Policy 2017 water Quality Objectives. In order to satisfy best practice control of pollutants it is proposed to provide pre-treatment of the discharge prior to the flow entering the Detention

Basin using Atlan (previously SPEL) Stormsack litter traps or an approved equivalent installed in each of the pits on site.

#### Implementation

The Detention Basin and shared pipework will be located within a common easement accessible to future owners of Lots 1 and 2.

#### Management / Maintenance

Maintenance of the Rainwater collection and storage system will be carried out in accordance with the operations and maintenance guidelines provided by the Building Services Consultant. This will include:

- Routine inspection and clean out of the Stormsack in accordance with Atlan's Operation and Maintenance Manual provided in Appendix E;
- Routine Inspection and clean out of the Detention Basin to confirm all inlets and outlets are operating by experienced cleaners;
- Disposal of all waste material removed from the pipes and tank to an acceptable disposal location.

# 6. SITE SERVICES

The lots being developed have been occupied by four separate residential dwellings over five lots with water, sewer, electricity and telecommunications services available to these lots. The services requirements for the proposed development will be assessed during the detailed design phase and the appropriate consultant will be approaching the relevant authorities to provide the appropriate services to the development.

## 6.1 Water Services

The current lots have metered services off their road frontages namely the DN 65 PE water main in the Cambridge Street verge and a 100 mm diameter AC water main in the George Street verge. All existing water metered services are proposed to be cut and capped at the water main.

It is proposed that Lots 1 and 2 will be serviced separately off the existing DN 65 water Main in Cambridge Street as shown on Drawing SKC500\_B provided in Appendix C. This arrangement will be subject to a flow and pressure test and a design by the Building Hydraulics Consultant in the detail design phase.

## 6.2 Sewerage Services

Council's Infrastructure Mapping and the details survey show that there is an existing 150 mm dia earthenware sewer passing through the site under the proposed buildings with a manhole located within the proposed Lot 1 close to the external wall of the Tenancy T1 building.

An investigation was carried out on whether the sewer could be diverted along the northern boundary of the site as shown on Drawing C500\_B. The Existing sewer from the upstream manhole in the Leagues Club Property west of George Street and the downstream manhole at as a grade of 1:130. Council's minimum grade for a 150 mm diameter sewer is 1:150 in accordance with the Capricorn Municipal Design Guidelines. As such it was found that with the standard drops required, at the four 90 degree directional changes at the proposed manholes, the available grade was in the order of 1:300 for a diverted sewer as shown for Line 1 on drawing C501\_B in Appendix C. This does not comply and was discounted.

Since diverting the sewer to a location further down the catchment would not be economical for the development it is proposed that the sewer alignment be built over as described below and shown on C500\_B and Line 2 on C501\_B in Appendix C.

## Lot 1

Based on the location of the existing sewer manhole relative the Tenancy T1 building it is proposed to remove this manhole, construct new manholes each side of the T1 building and replace the existing earthenware sewer with a 150 mm DICL pipe. A new lot 1 connection will be provided in the new downstream manhole 1/2. The sewer will then be built over in accordance with QDC MP1.4 and council's specific requirement.

## Lot 2

The existing sewer will remain in place and a branch connection fitted near the eastern site boundary. The existing sewer will then be built over in accordance with QDC MP1.4 and council's specific requirement.

## 7. **RECOMMENDATIONS**

Based on our review of the proposed development and its general layout, topography and surrounding development and infrastructure the following recommendation are made and are shown on the drawings provided in Appendix C:

- The appropriate erosion and sedimentation control measures identified in this report are to be installed during the construction phase and may be modified or added to in accordance with the builder's construction management plan;
- The increase in peak discharge from the site is maintained at or below predevelopment peak flows using the proposed detention basin located on site and will not impact any upstream or downstream properties adjacent to this site.
- The site drainage pits will be fitted with Atlan Stormsacks or approved equivalent to reduced gross pollutants in the site discharge;
- The lots will be serviced by individual water metered connection from the existing 65 mm water main on Cambridge Street subject to a review by the Hydraulic Consultant in the detail design phase;
- The existing sewer will be replaced with a 150 mm diameter DICL sewer under the proposed Tenancy T1 building and connections provided for Lots 1 and 2 within each lot with both Tenancy buildings 1 and 2 being built over the sewer in accordance with QDC MP1.4 and council's specific requirements; and
- The appropriate consultant will approach the relevant utility supply authority during the detail design to determine the development demand and service requirements for electricity and telecommunications.

The above measures will be developed as part of the detail design.

We therefore request the appropriate level of assessment and approval of this document.

# Appendix A - Architectural Site Plans, Verve Building Designs





ISSUE		- 2,014.5m2	- 1,064.5m2	- 950m2	FA)	- 183m <sup>+</sup>	- 10.5m <sup>2</sup>	ΓΕΑ) 2017		- 15.5m <sup>2</sup>		- 6	- 5	1	- 15		- 481m <sup>2</sup>	- 1707m <sup>2</sup>		- 1533.5m <sup>2</sup>	– 307.5m²	۲			4			1	PLAN	Revision
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230118C - Proposed Food Outlet Development Cnr Cambridge Street and George Street QLD Stormwater Management Plan & Engineering Services Report - Rev A

## Appendix B - Contour and Detail Plan 23641-CD01,

**Vision Surveys** 



230118C - Proposed Food Outlet Development Cnr Cambridge Street and George Street QLD Stormwater Management Plan & Engineering Services Report - Rev A

## Appendix C Engineering Plans

Pre-Development Land Use Plan SKC100-B Post Development Land Use Plan SKC101-B Preliminary Bulk Earthworks Plan SKC200\_B Preliminary Earthworks Sections SKC201\_B Preliminary Erosion & Sediment Control Plan SKC250\_B Preliminary Erosion and Sediment Control Details SKC251\_B Preliminary Stormwater & Siteworks Plan SKC300\_B Preliminary Detention Section SKC301\_B Preliminary Water and Sewer Plan SKC500\_B Preliminary Sewer Longitudinal Sections SKC501\_A



















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Appendix D - Rational Method Catchment Calculations

#### NIGEL FLETCHER & ASSOCIATES PTY LTD ENGINEERS - PROJECT MANAGERS

Rational Method Site Calcs Cambridge Street Rockhampton Catchment Flow Calcs 230118C

	m²		m²
Pavement	27.8	0	27.8
Roof	586.5	0	586.5
Landscape	1399.7	0	1399.7
	2014	0	2014

Existing Predevelopment Catchment

 Impervious
 614.3 m<sup>2</sup>

 % Impervious
 30.50%

Area 0.2014 ha

			63.30%	50%	20%	10%	5%	2%	1%
		Fy	0.8	0.85	0.95	1	1.05	1.15	1.2
		Existing	16	16	16	16	16	16	16
QUDM Table 4.5.3		I ( mm/hr)	76.9	85.55	113.5	133	153	180.5	202.5
C10	0.74	Cy	0.59	0.63	0.70	0.74	0.78	1.00	1.00
10%AEP 1 hr	65.1	Qo m3/s	0.025	0.030	0.045	0.055	0.067	0.101	0.113
DRAINS Existing Catch		Qo m3/s	0.020		0.036	0.051	0.065	0.087	0.107
		Difference	-0.005	-0.030	-0.009	-0.004	-0.002	-0.014	-0.006
		15	82.1	91.3	121	142	163	193	216
		20	71.7	79.8	106	124	143	168	189
		17	76.9	85.55	113.5	133	153	180.5	202.5

PO BOX 7217 SOUTHPORT PARK QLD 4215 M : 0423 782 127 E : nigel@nigelfletcherassociates.com.au

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 17.5 min

230118C - Proposed Food Outlet Development Cnr Cambridge Street and George Street QLD Stormwater Management Plan & Engineering Services Report - Rev A

Appendix E Atlan Stormsack Details and O&M Plan



**At-Source Gross Pollutant Trap** 





atlan.com.au



The Atlan StormSack is specifically designed for the capture of gross pollutants, sediment, litter, and oil and grease. Ideally suited for storm drain retrofits, the StormSack's unique design allows maintenance to be performed using conventional vacuum suction equipment.

StormSack filtration solutions are highly engineered water quality devices that are deployed directly in the stormwater system to capture contaminants close the surface for ease of maintenance. Easily retrofitted into new or existing structures, StormSack filtration technology is a decentralized approach to stormwater treatment that essentially repurposes traditional site infrastructure and customizes it to meet specific site water quality goals. In this way, it satisfies important objectives of today's LID (Low Impact Development) criteria.

From an operations perspective, catch basins with StormSack filters are also easier and quicker to clean out because pollutants are trapped just under the grate.

# APPLICATIONS

- Council storm drain retrofits
- Commercial / retail / residential
- Litter prone urban areas
- Scrap metal / solid waste / oil storage
- Part of treatment train
- Construction sediment / erosion

## **BENEFITS**



- Can be modelled in MUSIC in conjunction with bio-retention
- Low cost gross pollutant capture
- Quick & easy installation
- Simple maintenance
- At-source capture
- Adjusts to custom pit sizes

The StormSack was introduced to the Australian market in 2012 and field testing is underway at several locations in South-east Queensland. Laboratory testing has shown capture of 99.99% of gross pollutants up to the bypass flow rate. Further results will be provided as they become available.

Recommended minimum clearance from bottom of StormSack to inside bottom of vault is 50mm. Typical frame adjustability range of 127mm in each direction.





## **FEATURES**

POLLUTANT	EFFICIENCY
Gross Pollutants (GP)	100%
Total Suspended Solids (TSS)	61%
Total Phosphorus (TP)	28%
Total Nitrogen (TN)	45%

\*Contact Atlan to confirm approved performance for the project LGA

# **HOW IT WORKS**

This technology is a post developed stormwater treatment system. The StormSack provides effective filtration of solid pollutants and debris typical of urban runoff, while utilising existing or new storm drain infrastructure. The StormSack is designed to rest on the flanges of conventional catch basin frames and is engineered for most hydraulic and cold climate conditions.

Installation procedures shall include removing the storm grate, cleaning the ledge of debris and solids, measuring catch basin clear opening and adjusting flanges to rest on the grate support ledge. Install StormSack with splash guard under curb opening so the adjustable flanges are resting on the grate support ledge. Install corner filler pieces. Reinstall storm grate directly on support flanges rise shall be no more than 3mm.

# MAINTENANCE

Typically the StormSack is serviceable from the street level, and therefore maintenance does not require confined space entry into the catch basin structure. The unit is designed to be maintained in place with a vacuum hose attached to a sweeper or a vactor truck. Use only Atlan replaceable parts.

Application	Regulatory Issue	Target Pollutants
Council Storm Drain Retrofits	At-source litter capture	Sediment, Litter, O&G
Commercial/Retail/Residential	Stormwater Compliance	Sediment, Litter, O&G
Litter Prone Urban Areas	Cost effective litter control	Litter ≥ 5 mm
Scrap Metal/Solid Waste/Oil Storage/Etc	Industrial Multi-Sector General Permit	Gross Pollutants, O&G
Part of Treatment Train	Council Stormwater Quality Improvement Targets	Sediment, Litter, O&G
Construction Sediment/Erosion	Sediment Control Plan	Sediment/Erosion Control



# **TECHNICAL DRAWINGS**



## **TECHNICAL DRAWINGS**



# **INSTALLATION DETAILS**



# **StormSack**

**At-Source Gross Pollutant Trap** 



100 Silverwater Rd, Silverwater NSW 2128 PO Box 7138, Silverwater NSW 1811 P: +61 2 8705 0255 P: 1300 773 500	130 Sandstone Pl, Parkinson QLD 4115 P: +61 7 3271 6960	897 Wellington Rd Rowville VIC 3178
nsw.sales@atlan.com.au	P: 1300 773 500 qld.sales@atlan.com.au	P: +61 3 5274 1336 P: 1800 810 139 sales@atlan.com.au <b>VIC GEELONG BRANCH</b> 70 Technology Close, Corio VIC
<b>SA OFFICE</b> 9 Hampden Road, Mount Barker SA 5251 P: 1300 773 500 sales@atlan.com.au	<b>GLD SUNSHINE COAST BRANCH</b> 19-27 Fred Chaplin Cct, Bells Creek, QLD 4551 P: 1300 773 500 gld.sales@atlan.com.au	WA OFFICE 2 Modal Cres Canning Vale WA 6155 P: +61 8 9350 1000 P: 1800 335 550 sales@atlan.com.au
NZ OFFICE WANGANUI 43 Heads Road Wanganu New Zealand P: +64 6 349 0088 sales@atlan.com.au atlan.co.nz	NZ OFFICE WELLINGTON 41 Raiha St Portrua Wellington New Zealand P: +64 4 239 6006 sales@atlan.com.au atlan.co.nz	NZ OFFICE AUCKLAND 100 Montgomerie Road Airport Oaks P: +64 9 276 9045 sales@atlan.com.au atlan.co.nz

'We believe clean waterways are a right not a privilege and we work to ensure a joy in water experience for you and future generations.'

Andy Hornbuckle



P 02 8705 0255 | sales@atlan.com.au 100 Silverwater Rd, Silverwater NSW 2128 Australia atlan.com.au



# ACCESS TRAFFIC





Food & Drink Outlet Development Corner George Street & Cambridge Street, Rockhampton

D/156-2023 26 February 2024

**Traffic Impact Assessment** 

November 2023

Prepared for EPO Developments Pty Ltd

## **Quality Information**

Document	Traffic Impact Assessment
Client	EPO Developments Pty Ltd
Reference	EP00123-001
Date	7 November 2023
Prepared By	Todd Lisle / Andrew Barrie

## **Revision History**

Rev	Revision	Details	Author	brised	
	Date		Name / Position	Signature	
А	23/10/2023	Final	Andrew Barrie Principal Traffic Engineer	Original Signed	
В	07/11/2023	Final – Revised Architecturals	Andrew Barrie Principal Traffic Engineer RPEQ 12801	- je	

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ACCESS TRAFFIC Food & Drink Outlet Development – Corner George Street & Cambridge Street, Rockhampton Traffic Impact Assessment

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## 1.0 Introduction and Summary

#### 1.1 Project Background

The applicant proposes to establish a food & drink outlet development on the subject site, located on the corner of George Street (Bruce Highway) and Cambridge Street, Rockhampton. The site is currently comprised of five lots, with the relevant addresses and real property descriptions provided in **Table 1**.

The proposal includes the development of two separate tenancies on the site, including a fast food restaurant (Oporto) and drive-thru coffee store.

	•	
Lot #	Address	Lot & Plan
1	65A George Street, Rockhampton City QLD 4700	2 on RP605704
2	28 Cambridge St, Rockhampton City QLD 4700	1 on RP605704
3		3 on RP 601157
4	30 Cambridge St, Rockhampton City QLD 4700	4 on RP 601157
5	34 Cambridge St, Rockhampton City QLD 4700	5 on RP 601157

#### Table 1 Site Addresses and Descriptions

#### 1.2 Project Context

Access Traffic Consulting (ATC) was commissioned by EPO Developments Pty Ltd to undertake a Traffic Impact Assessment (TIA) for the proposed food & drink outlet development (the Project).

The subject site is located within the Rockhampton Regional Council (RRC) Local Government Area, with vehicular access to the site proposed to be provided from the RRC-controlled Cambridge Street along the south-eastern boundary of the site. Development traffic will also utilise the adjacent George Street / Cambridge Street intersection to access the subject site, as well as the adjacent State-controlled link of George Street (10F - Bruce Highway (Rockhampton-St Lawrence)).

This Traffic Impact Assessment (TIA) has therefore been carried out to determine the potential impacts of the Project on the operation of both the local Council and State-controlled road networks, and as such the proposal has been assessed considering the relevant State government guidelines and Council controls, including the Department of Transport and Main Roads' Guide to Traffic Impact Assessment (GTIA - 2018) and the Rockhampton Regional Council Planning Scheme (2015).

#### 1.2.1 Study Area

As identified above, the proposed site of the Project is located at the intersection of Cambridge Street and George Street as shown in **Figure 1** below.

Given the nature of the proposed development (i.e. a fast food restaurant and drive-thru coffee outlet which would attract a reasonable proportion of drop-in traffic) and the fact that it will be located on an arterial road, it has been determined that the impact of the proposal would essentially be limited to the immediate surrounds of the site, including Cambridge Street and the Cambridge Street / George Street intersection.



Figure 1 Study Area

[Source: Qld Globe]

#### 1.2.2 **Previous Road Authority Advice**

CONSULTING

As part of the initial stage of the Project, a pre-lodgement advice was requested from both RRC and the State Assessment and Referral Agency (SARA) for the Department of Transport and Main Roads (TMR). The advice provided by these authorities is included for reference as Appendix A, noting that this advice was provided for a previous iteration of the proposal which was similar in terms of the key traffic elements of the site (site access location and configuration, expected routes to/from site etc.) but proposed only one food and drink outlet use (Oporto), with the rear building being previously nominated as a retail use.

Notwithstanding this, a summary of the key traffic-related items identified for the Project within the received advice are identified below.

#### **RRC Pre-lodgement Advice**

#### Layout and Design

- Council preference is to have second entry or exit access from / to George Street to alleviate the congestion in Campbell Street. Further consideration should be given for a Left in / Left out access arrangement from / to Cambridge Street.
- No verge widening required to either George Street or Cambridge Street. •
- Refuse collection proposed for T1 is bit of a concern. As per the submitted drawing refuse will be collected from the drive through lane. This arrangement depends upon the hours of operations. Please provide the hours of operations for T1.

#### Traffic

- Car parking will need to comply with Rockhampton Regional Planning Scheme requirements. •
- Car parking design will need to comply with AS2890. Lighting required for parking areas. •
- Accessible car parking spaces are required in accordance with BCA requirements. .
- Access facility and queuing areas must comply with AS2890 requirements.
- Detailed scaled plan required which demonstrate turning movements / swept paths for the largest design vehicle given the intended use.

#### SARA Pre-lodgement Advice

- 1. The internal and external swept paths appear to indicate potential for a clash of movement between inbound and exiting small vehicles, particularly into the drive through area. The dimensions of the driveway may require revision.
- 2. The layout of the development indicates the proponent has an expectation of high traffic volumes through the drive through facility. There is a potential for queueing to occur on to Cambridge Street which may affect the operational safety and efficiency of the intersection with George Street.
- 3. Based on the 2022 AADT for George Street to be 15738 Vehicle per day the proposed development application must include a detailed Traffic Impact Assessment (TIA) prepared in accordance with TMR's Guide to Traffic Impact Assessment (GTIA) and be signed by a RPEQ. The TIA must undertake a SIDRA assessment for the intersection of George Street and Cambridge Street.
- 4. If required, the proposed development application must provide an RPEQ engineering design report and drawings for the upgrading the intersection of George Street and Cambridge Street.
- 5. The proponent must identify, mitigate, and demonstrate road infrastructure (including bicycle and footpath) and public utility impacts.

The development scheme (as discussed in the following sections), in conjunction with this Traffic Impact Assessment Report, seek to address the above items raised by both RRC and SARA, as well as the remaining key traffic elements of the proposal.

## 2.0 Existing Conditions

#### 2.1 Land Use and Zoning

The subject site is located as identified in **Table 1**. The subject site is approximately 2408.4m<sup>2</sup> in area and is currently the site of single detached dwellings.

The subject site is designated as "Specialised Centre" zoning under Council's Planning Scheme, as shown in **Figure 2** below, which is also located within the "GRGSP – Residential and Food Services Sub-Precinct".



Figure 2 Land Use Zoning

[Source: RRC Online Mapping]

### 2.2 Adjacent Land Use / Approvals

As shown in **Figure 2** above, the surrounding land is predominantly zoned as "Specialised Centre" and "Low Density Residential", with 'Sport and Recreation" facilities (Brown Park) on the opposite side of Geroge Street.

Based upon the information in Council's Planning and Development database, it does not appear that there are any significant recent development approvals or current applications within proximity to the subject site, which would be of relevance to the proposed development.

2.3 Surrounding Road Network Overview

#### 2.3.1 Road Links

Reference has been made to the existing road hierarchy identified in the Rockhampton Planning Scheme, with the classifications of the relevant sections of the network shown in **Figure 3**, and further details of the relevant road links provided in the following sections.



Figure 3 RRC Existing Road Hierarchy

CONSULTING

[Source: RRC Online Mapping]

#### George Street – 10F Bruce Highway (Rockhampton-St Lawrence) 2.3.1.1

George Street forms part of TMR Road 10F – Bruce Highway (Rockhampton-St Lawrence), which is a statecontrolled road that provides the main north-south transport route on the east coast of Queensland. Within the urban areas of Rockhampton, this section of the highway (George Street) forms part of the main arterial road connections between the north and south sides of the township of Rockhampton, while also providing access to adjacent residences and commercial developments along its length.

The section of this link adjacent to the development site runs in a generally north west – south east direction and is identified as a Highway under RRC's road hierarchy (refer Figure 3 above).

The section of George Street fronting the subject site (between Albert Street and Cambridge Street) provides a four-lane, two-way median divided carriageway. Immediately adjacent to the site is a channelised right turn lane.

Based upon traffic count data provided by TMR (AADT Segment Report – Site 60027), George Street carries in the order of 16,000vpd in proximity to the subject site and currently operates under a posted speed limit of 60km.

#### 2.3.1.2 Cambridge Street

Cambridge Street is a local road under the jurisdiction of RRC. It runs in a generally northeast-south west direction, connecting from Murray Street at its southern end to Campbell Street at its northern end.

Cambridge Street has a two-way, two lane undivided cross-section, with a pavement width of approximately 15.5m. Kerbside parking is permitted on Cambridge Street, clear of property access driveways and intersections, in accordance with Queensland Road Rules. As a local street in a built-up area, a speed limit of 50km/hr applies.

#### 2.3.2 Intersections

#### 2.3.2.1 George Street / Cambridge Street

The intersection of George Street / Cambridge Street currently operates as a four-way priority controlled (stop sign) intersection, with George Street forming the major road approaches and Cambridge Street forming the minor road approaches.

As shown in **Figure 4** below, movements to/from George Street are currently restricted to left in – left out operation for the relevant eastern Cambridge Street leg of the intersection, with a raised splitter island on the Cambridge Street approach and closed centre median on George Street.

Similar movement restrictions are in place for the western Cambridge Street approach, with the addition of right turn movements in via a designated channelised right turn pocket within the centre median on George Street. It is noted that the current configuration of this right turn pocket, and in particular the shape and extension of the southern portion of the centre median on George Street and "no right turn signage" on the southern approach to the intersection, is considered adequate to restrict and almost completely remove the potential for illegal right turn movements into the eastern Cambridge Street leg of the intersection.



Figure 4 Existing George Street / Cambridge Street Intersection

#### 2.4 Existing Intersection Volumes

For the purpose of this assessment, peak hour turning movement counts were undertaken at the George Street / Cambridge Street intersection on Tuesday 20 June 2023. The results of these surveys are included for reference as **Appendix B**, which identify an AM peak of 7:45-8:45am and PM peak of 4:30-5:30pm.

#### 2.5 Existing Intersection Performance

The recorded traffic volumes at the George Street / Cambridge Street intersection have been utilised to undertake preliminary intersection analysis (using SIDRA software) to establish the operational performance of this intersection under current traffic conditions, during the AM and PM peak periods.

A summary of the results is provided in **Table 2**, with further detailed results included for reference as **Appendix C**.

Analysis Scenario	Intersection Degree of Saturation	Level of Service *	Critical Movement Delay (sec)	Maximum 95% Back of Queue Length (m)
2023 AM Peak	0.474	LOS B*	17.3	16.1m
2023 PM Peak	0.309	LOS A*	13.2	9.5m

#### Table 2 Existing (2023) SIDRA Results - George Street / Cambridge Street Intersection

\* LOS value identified is for the critical movement, not the overall intersection (as the subject intersection is priority-controlled)

The results above indicate that the subject intersection is currently (2023) operating satisfactorily, with all calculated values of DOS, LOS, delay and vehicle queueing all well within acceptable limits for a prioritycontrolled intersection.

#### 2.6 **Road Safety**

#### 2.6.1 **Road Crash History Review**

CONSULTING

A review of the road crash history in proximity to the subject site (primarily George Street / Cambridge Street intersection and relevant section of Cambridge Street) was undertaken, in accordance with the direction provided in the Department of Transport and Main Roads' GTIA. This review was completed using the road crash data available from the Queensland Globe database, with the data from the latest 5-year period utilised for the assessment, with further details of the recorded crashes in this period summarised in Table 3 below.

#### Table 3 Summary of Road Crash History (2001-2019)

Crash Reference Number	Crash Year	Crash Severity	Crash Type	DCA Code	Crash Description
344910	2019	Hospitalisation	Multi-Vehicle	101	Veh'S Adjacent Approach: Thru-Thru
246377	2016	Hospitalisation	Multi-Vehicle	101	Veh'S Adjacent Approach: Thru-Thru

Of the crashes identified above, crash 344910 (2019) was located at the Cambridge Street / Campbell Lane intersection, while crash 246377 (2016) involved vehicles at the intersection of George Street and the western Cambridge Street leg.

Based on the limited number and differing locations of the recorded crashes in the vicinity of the site, it can be seen that no safety issues currently exists that would require rectification/mitigation as part of the development.

#### 2.7 Site Access

Currently, vehicular access to the site is provided via a number of existing access crossovers, with one provided on George Street and two on Cambridge Street frontages, as shown in Figure 5 below. The Takalvan Street crossover is approximately 4m wide and positioned approximately 40m from the Cambridge Street intersection (measured to the road centreline). The first Cambridge Street access is a kerb break that isn't currently used as a crossover, which is roughly 4m wide and located 8.5m from the hold line of the intersection. The second access on Cambridge St is a crossover approx. 4m wide and located 27m from the hold line of the intersection.

These accesses catered for the pre-development residential use of the land.


Figure 5 Existing Site Access Locations and Configurations

[Source: Google Street View]

2.8 **Existing Public Transport Facilities** 

CONSULTING

There are no existing public transport facilities on either George Street or Cambridge Street in the vicinity of the proposed development site.

2.9 **Existing Active Transport Facilities** 

As shown in Figure 4 above, an existing pedestrian footpath is located within the verge area along the George Street frontage of the subject site. Further to this, no marked, on road bicycle lanes are currently provided on either George Street or Cambridge Street within the vicinity of the site, although adequate width to accommodate on-road bicycle movements is available in the shoulder area on George Street and within the carriageway on Cambridge Street.

ACCESS TRAFFIC Food & Drink Outlet Development – Corner George Street & Cambridge Street, Rockhampton Traffic Impact Assessment

## 3.0 Proposed Development Details

## 3.1 Development Overview and Operational Details

As previously identified, the applicant proposes to establish a food & drink outlet development on the site, which incorporates two separate tenancies, including a fast food restaurant (Oporto) and a drive-thru coffee use. Based on preliminary discussions with the applicant it is understood that both tenancies forming the development are anticipated to be constructed and operational in 2024 (pending approvals),.

A copy of the proposed plans for the development are included for reference in **Appendix D**, with an extract showing the proposed development site layout in context with the existing external road network provided as **Figure 6** below.



Figure 6 Proposed Site Layout

[Source: Verve Building Design Co. Dwg. 22091-DA02-B]

As shown in these plans, the proposed development comprises a food and drink building of 183m<sup>2</sup> GFA positioned towards the south of the site with a drive-through facility. A drive-thru coffee outlet building of 150m<sup>2</sup> GFA is proposed to the north of the site. This car parking (as well as a service bay proposed to the drive-thru coffee building) will be accessed via a driveway onto Cambridge Street positioned adjacent to the southern site boundary, approximately at the same location as the existing crossover.

In assessing the adequacy of car parking and queue storage provisions, as well as the anticipated traffic generation of the proposed development, reference has been made to the report prepared by Bitzios Consulting on behalf of the Roads and Maritime Services (RMS) NSW, which is titled "Trip Generation and Parking Demand Surveys of Fast Food Outlets Analysis Report", dated 13 September 2016. This report provides recommendations on trip generation, parking, and queuing at specific fast food restaurants (including Oporto), based upon surveys undertaken at existing and operational developments.

It is noted that the plan of development as shown in **Figure 6** references two discrete stages, however this is commercial in nature and the developer intends for both stages to be developed concurrently or within the same year. This means that for the purpose of this report, the opening year has been considered on a single stage basis.

## 3.2 Development Proposal

## 3.2.1 Site Access

As shown in **Figure 6** above, vehicular access to the site is proposed to be provided via a new crossover onto Cambridge Street on the eastern site boundary, located approximately 30m to the east of the adjacent George Street intersection. This access arrangement is consistent with standard practice, providing vehicular access onto the lowest order road to which the subject site has frontage, while also providing the maximum separation practicable from the George Street, while still maintaining appropriate access and vehicle circulation arrangement to both proposed tenancies on the subject site.

Further to this, it is noted that the existing secondary/redundant existing access driveways onto both Cambridge Street and Campbell Lane will be closed and removed as part of the proposal.

The proposed site access on Cambridge Street is approximately 7.0m wide at the property boundary, which is considered adequate to accommodate two-way passenger vehicle flow, as well as access and egress by the largest vehicle anticipated to require access to the site (as discussed in Section **3.5.2.2**). In addition, the proposed driveway exceeds the width requirements for the site as per AS2890.1 (Tables 3.1 and 3.2) which identifies a Category 1 driveway (i.e. 3m to 5.5m), based on the proposed operation of the development (high turnover - Class 3, 3A), local frontage road access and less than 25 parking spaces on site).

Furthermore, the detail of the crossover from the property boundary to the Cambridge Street kerbline is generally in accordance with CMDG standard drawing R-042, Type A – Two Way Access Commercial Driveway Slab.

Based on the information provided above, it is concluded that the proposed site access arrangements will be adequate to cater for the traffic generated by the proposed development and operate satisfactorily from a traffic engineering perspective.

## 3.2.2 Internal Site Facilities

In order to assess the adequacy of the internal traffic facilities, reference has been made to RRC's Access, Parking and Transport Code and relevant planning scheme policies, as well as the relevant Australian Standards (AS2890.1, AS2890.2, AS2890.3 and AS2890.6). Compliance with the requirements of these documents is discussed in the following sections.

## 3.2.2.1 Car Parking

Table 9.3.1.3.2 within the Access, Parking and Transport Code of the RRC Planning Scheme stipulates a car parking requirement for a Food and Drink Outlet use of 1 space / 15m<sup>2</sup> of gross floor area (GFA) for seating areas (including outdoor seating areas), and separate queuing for 10 vehicles if a drive through facility is provided.

Conservatively assuming that 50% of the overall GFA of each tenancy is seating area, the application of this parking rate to the proposed development would equate to a car parking requirement of 11 spaces (plus separate queuing for 10 vehicles in the drive through each facility).

As shown in the layout plan included as **Appendix D**, the proposal provides:

- 15 car parking spaces on site, which exceeds Council's recommended provision (11 spaces).
- Standard parking spaces are 5.4m long and 2.6m wide, which meets the requirements for short-term (Class 3) parking as per Table 1.1 of AS2890.1.



- The parking bays are accessed from a 7.0m wide parking aisle which exceeds the minimum requirements for Class 3 parking (5.8m) as stipulated in Figure 2.2 of AS2890.1.
- The provision of one (1) accessible parking space for the proposal aligns with the general provision rate of between 1-2% of the overall parking bays on site. Further to this, the proposed accessible parking space is in accordance with the requirements of AS2890.6, including the provision of a 2.4m x 5.4m bay and adjacent 2.4m x 5.4m shared area, in convenient proximity to the building entrances.
- Queue storage for 12 vehicles within the drive through lane for the food and drink outlet (including waiting bay), and 9 for the drive-thru coffee outlet. This slight reduction in queueing provision for the drive-thru coffee outlet is offset as additional queue storage will be available within the central parking aisle on site. The use of the parking aisle is considered acceptable as given two tenancies won't have coincident hours of peak operation (i.e. Drive-thru coffee peak operation in AM when Oporto is either closed or at reduced operation / Oporto peak operation in PM when drive-thru coffee outlet is closed), meaning that use of the parking aisle for vehicle queue storage is unlikely to significantly impact the operation of either tenancy, vehicle circulation on site or the use of the adjacent parking spaces (of which there is an oversupply).
- Vehicle swept paths have been undertaken to confirm satisfactory manoeuvring for a B99 passenger vehicle through the drive-thru facilities of both tenancies. The results of these analyses are included as **Appendix E** and demonstrate that the drive through will comfortably accommodate a large car (B99 passenger vehicle).

Notwithstanding the points above, it is understood that both TMR and RRC have concerns regarding the potential for excessive vehicle queues from the site spilling out onto Cambridge Street, and even further to George Street. Whilst these concerns are noted, the on-site queueing areas provided as part of the proposal are considered more than adequate to cater for the vehicle storage requirements of the expected peak hour operations of the site, based on the following:

- The proposed level of on-site parking provision (up to 8) and queue storage (11 vehicles) within the Oporto drive-thru is well above the recommended provision as per Bitzios Consulting's "Trip Generation and Parking Demand Surveys of Fast Food Outlets Analysis Report", which provides the following results of parking and queuing demand surveys at existing and operational Oporto restaurant developments:
  - maximum number of parked vehicles = 6.
  - average number of parked vehicles = 6
  - maximum queue length = 6
  - average queue length = 4
- Further to this, dual drive-thru facilities have been proposed for the Oporto tenancy to increase vehicle storage lengths from the order point, further reducing the potential for queuing spilling out of the provided the drive-thru lanes.
- It is noted that there is acceptable storage within the drive-thru lanes of both tenancies, with additional on-site storage area also available in parking aisle. Therefore it is seen that the risk of queuing on Cambridge Street is acceptably low.
- Finally, in the unlikely event that vehicles queue out of the site onto Cambridge Street, the existing carriageway width is adequate to allow vehicles to queue adjacent to the kerb, leaving sufficient width to maintain through traffic to pass clear within the wide existing lane.

Based on the information provided above, it can be seen that the proposed parking and vehicle queue storage arrangements on site can be considered acceptable and suitable to cater for the parking and vehicle queue storage demands for the expected operation of the two tenancies on site.

## 3.2.2.2 Service Vehicle Arrangements

The proposed plan of development, as shown in Dwg. 22091-DA02-B (refer **Appendix D**) identifies that each tenancy on the site will have its own service/loading bay, with the bay for Tenancy 2 (Drive-thru Coffee) located on the northern side of the building, with the service bay for the proposed Oporto restaurant (Tenancy 1) being co-located within the drive-thru lane closest to the building. The use of the second, northernmost drive-thru lane as the service/loading bay for Tenancy 1 is considered appropriate as the service / loading vehicle movements are anticipated to be infrequent and proposed to be scheduled out of hours of the peak operation of both the Oporto restaurant and the overall development site.

The proposed service vehicle arrangements on site have been located and designed to accommodate the required manoeuvres of up to a 10.24m long rigid vehicle for refuse collection (RCV), with a smaller 8.8m Medium Rigid Vehicle (MRV), which has been by identified by the applicant as the proposed service vehicle configuration for both tenancies.

Swept path analysis was also undertaken for both RCV and MRV service vehicle configurations (refer **Appendix F**), which clearly show that the required service vehicles will be able to enter the site in a forward gear, manoeuvre into and out of the proposed service / loading bay locations and then exit the site in a forward gear in accordance with Council's general requirements. It is noted however that the relevant swept paths showed that while generally contained within the parking aisle area, the vehicle paths for the RCV in particular were shown to extend slightly into the adjacent on-site parking facilities, with the path for the Tenancy 2 also shown to require the use of the drive-thru exit area for Tenancy 1. As such it is recommended that all service vehicle movements for the site be completed out of the anticipated hours of operation for both tenancies, to remove the potential for conflict with service vehicles and minimise the impact to vehicle circulation on site.

Based on the information above, it is considered that the proposed service vehicle arrangements are in accordance with Council's requirements and are adequate to cater for the expected service vehicle movements associated with the operation of the proposed development.

## 3.2.2.3 Bicycle Parking Arrangements

Table SC6.4.7.1 within the Bicycle Network Planning Scheme Policy of the RRC Planning Scheme stipulates a bicycle parking requirement of 1 space / 100m<sup>2</sup> GFA (employee) and 1 space / 50m<sup>2</sup> GFA (visitor) for a Food and Drink Outlet use. The application of this parking rate to the proposed development (which comprises an overall 333m<sup>2</sup> GFA for a food and drink outlet) leads to a bicycle parking requirement of 6 spaces for the fast food (Oporto) restaurant use and an additional 5 bicycle parking spaces for the drive-thru Coffee Shop use.

While not currently shown on the provided layout plan, it is noted that adequate room is expected to be available at the front of the building areas to accommodate the level of on-site bicycle parking to meet Council's requirements.

## 4.0 Development Traffic

The following sections outline the assumptions applied in order to forecast the traffic generation of the proposed development, for the purpose of traffic impact analyses (as discussed in **Section 5.0**).

## 4.1 Traffic Generation

Reference has been made to the report prepared by Bitzios Consulting on behalf of the Roads and Maritime Services (RMS) NSW, which is entitled "Trip Generation and Parking Demand Surveys of Fast Food Outlets Analysis Report", dated 13 September 2016.

This report provides recommended traffic generation rates based upon the specific fast food tenancy and recommends a baseline trip generation rate of 41 trips in the PM network peak hour for an Oporto restaurant. However this trip generation rate is considered to be low in the context of the development proposed and accordingly a slightly higher trip generation rate of 50 trips in the PM peak hour has been adopted for the purpose of this assessment.

In addition, given Oporto restaurants typically do not open until 10am, it has been conservatively been assumed that the trip generation of the Oporto (Tenancy 1) during the AM peak will be half (approx. 25 trips) of that adopted for the PM peak.

Meanwhile, the anticipated traffic generation rate for the drive-thru coffee shop (Tenancy 2) has been established from the standard rate specified within the *Institute of Traffic Engineers Common Trip Generation Manual*, which identified a peak rate of 42.8 trips per 1,000ft<sup>2</sup> (or 46.2 trips per 100m<sup>2</sup>) for a coffee shop with a drive-thru, which equates to a peak hour generation of 69 trips. Further to this, it is noted that the drive-thru coffee store is not expected to be open during the PM peak period, and as such no generation from the Tenancy 2 area has been assumed as part of this assessment.

## 4.2 Traffic Distribution

Given the nature and location of the proposed development, a reasonable proportion of the trips generated are expected to be "drop-in" trips undertaken by vehicles already travelling past the site.

For the purpose of the analyses it has conservatively been assumed that 50% of the trips generated by both tenancies on site will be undiverted "drop-in" trips, which is generally consistent with similar fast food uses as per the Bitzios Consulting report ("Trip Generation and Parking Demand Surveys of Fast Food Outlets Analysis Report"). Further to this, it has been assumed that the remaining 50% of trips generated by the development will be new trips or diverted drop-in trips.

A summary of the assumed distribution of traffic generated by the proposed development during the AM and PM peak periods assessed is provided in **Table 4** below.

Table 4	Proposed Development Fore	cast Traffic Distribution	(AM Peak Period)
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AN	1 Peak	PM Peak											
Ar	Arrival / Departure Profile (Tenancy 1 – Oporto / Tenancy 2 - Drive-thru Coffee)												
•	50% traffic inbound to development.												
•	50% traffic outbound from development.												
Di	stribution – Drop-in Trips (50%) (Tenancy 1 – Oporto / 1	Fenancy 2 - Drive-thru Coffee)											
In	bound												
•	75% from south-east bound on George Street.												
٠	12.5% from south-east bound on Campbell Street.												
•	12.5% from north-west bound on Campbell Street.												

## AM Peak

## PM Peak

## Distribution - Drop-in Trips (50%) (Tenancy 1 - Oporto / Tenancy 2 - Drive-thru Coffee)

## Outbound

- 75% to south-east bound on George Street.
- 12.5% to south-east bound on Campbell Street.
- 12.5% to north-west bound on Campbell Street. •

## Distribution – New Trips (50%) (Tenancy 1 – Oporto / Tenancy 2 - Drive-thru Coffee)

## Inbound

- 25% from north-east (Northside) via south bound on George Street.
- 30% from north-east (Northside) via Albert / Campbell / Campbell Street. ٠
- 15% from north-west (Wandal) via Campbell / Cambridge Street. •
- 10% from east via Campbell / Cambridge Street. •
- 20% from south-west (Allenstown / Range) via Albert / Campbell / Cambridge Street. •

## Outbound

- 25% to north-east (Northside) via Cambridge / George Street.
- 30% to north-east (Northside) via Cambridge / Campbell / Albert Street. •
- 15% to north-west (Wandal) via Cambridge / Campbell Street. .
- 10% to east (CBD) via Cambridge / Campbell Street. •
- 20% to south-west (Allenstown / Range) via Cambridge / George Street. •

#### 4.3 **Development Traffic Volumes on the Network**

Based on the information outlined above and the traffic distribution assumptions applied, an estimate of the development traffic volumes on the surrounding road network were established, with a summary of the resultant forecast AM and PM peak hour development traffic volumes provided in the Figure 8 to Figure 10.

As shown in these figures, the forecast increases in turning movement volumes as a result of the proposed development are expected to be relatively low. Notwithstanding this, these calculated development traffic volumes have been used to assess the impact of the proposal upon the operation of the surrounding road network, including the key intersection of George Street / Cambridge Street and the proposed site access on Cambridge Street, as discussed in the Section 5.0.





Figure 8 AM & PM Peak Development Volumes – T1 (Oporto)





Figure 9 AM & PM Peak Development Volumes – T2 (Drive-Thru Coffee)

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Figure 10 AM & PM Peak Development Volumes – Overall T1 (Oporto) + T2 (Drive-Thru Coffee)

## 5.0 Traffic Impact Assessment

## 5.1 Pre and Post Development Traffic Volumes

As previously noted, it is understood that it is intended that the development be operational by 2024. Therefore, the assessment of the impact of the development on the operation of the key adjacent intersection of George Street and Cambridge Street has been completed for the proposed year of opening (2024), in accordance with the requirements for intersections not providing direct site access as per the Department of Transport and Main Roads' *Guide to Traffic Impact Assessment (GTIA)*.

Additionally, the operational performance of the site access driveway has been assessed for the proposed year of opening (2024) and the 10-year design horizon (2034), consistent with standard practice for intersections on the local government road networks.

Forecasts of the future (2024 and 2034) pre-development traffic volumes during the AM and PM peak periods on the relevant sections of the road network were established, based on the application of a conservative 2% per annum compound growth rate to all surveyed (2023) movement volumes at the George Street / Cambridge Street intersection, with the resultant volume figures shown **Figure 12** and **Figure 13**.

The relevant post development volumes for both periods (2024 & 2034) were established by combining the forecast future pre development traffic volumes with the calculated development traffic volumes identified in **Section 4.3**, with the resultant forecast volumes shown in **Figure 14** and **Figure 15**.

- 5.2 Access and Frontage Impact Assessment and Mitigation
- 5.2.1 Turn Warrant Assessment

A turn warrant assessment has been undertaken to establish the applicable turn treatments at proposed site access point on Cambridge Street to cater for the forecast 2034 AM and PM peak post development traffic volumes at the access (refer **Figure 15**).

This assessment is based on the turn treatment warrants identified in Figure 2.26(c) of Austroads *Guide to Traffic Management - Part 6: Intersections, Interchanges and Crossings*, with the results shown in **Figure 11** and additional details of the turn warrant calculations included for reference as **Appendix G**.





Based on **Figure 11** above, it can be seen that the forecast 2034 peak hour post development traffic volumes at the proposed site access on Cambridge Street warrant the provision of basic right (BAR) and basic left (BAL) turn treatments, noting that sufficient width is available within the existing Cambridge Street carriageway to accommodate the required width for the treatments.

## 5.2.2 Intersection Capacity Analysis

In addition to the turn warrant assessment above, a capacity analysis of the operational performance of the proposed Cambridge Street / Site Access has also been undertaken. A summary of the analysis results for the post development traffic conditions is provided in **Table 5** below, with detailed SIDRA output results included for reference as **Appendix H**.

Analysis Scenario	Intersection Degree of Saturation	Level of Service	Critical Movement Delay (sec)	Maximum 95% Back of Queue Length (m)
Post Development				
2024 AM Peak	0.037	LOS A*	5.6	0.9m
2024 PM Peak	0.032	LOS A*	5.6	0.6m
2034 AM Peak	0.037	LOS A*	5.7	0.9m
2034 PM Peak	0.037	LOS A*	5.6	0.6m

Table 5 SIDRA Results - Cambridge Street / Site Access (Post-Development)

\* LOS value identified is for the critical movement, not the overall intersection (as the subject intersection is priority-controlled)

The results above indicate that the proposed configuration of the Cambridge Street / Site Access is expected to operate satisfactorily at both the year of opening (2024) and the 10-year design horizon (2034). This is demonstrated by all values for DOS, LOS, average delay and vehicle queueing calculated being <u>well within</u> acceptable limits of operation for a priority-controlled intersection.

It can therefore be concluded that the proposed configuration of the Cambridge Street / Site Access will be adequate to cater for the peak hour traffic movements expected to be generated by the proposed development.





Figure 12 2024 AM & PM Peak Traffic Volumes (Pre Development)





Figure 13 2034 AM & PM Peak Traffic Volumes (Pre Development)





Figure 14 2024 AM & PM Peak Traffic Volumes (Post Development)





Figure 15 2034 AM & PM Peak Traffic Volumes (Post Development)

## 5.3 Intersection Impact Assessment and Mitigation

## 5.3.1 Turn Warrant Assessment

A turn warrant assessment was also completed to establish the required left turn treatment on the relevant eastern leg of the George Street / Cambridge Street intersection, with no assessment required for the right turn movement due to the existing turn restriction at the intersection. In line with the requirements of TMR's GTIA this assessment has been completed for the proposed year of completion of the proposed development (2024), based on the calculated volumes shown in **Figure 15** above.

Again this assessment is based on the turn treatment warrants identified in Figure 2.26(c) of Austroads *Guide to Traffic Management - Part 6: Intersections, Interchanges and Crossings*, with the results shown in **Figure 12** and additional details of the turn warrant calculations included for reference as **Appendix G**.



Figure 12 Turn Warrant Assessment – George Street / Cambridge Street (2024 Post Development)

Based on **Figure 12** above, it can be seen that the forecast post development traffic volumes at the George Street / Cambridge Street warrant the provision of basic left (BAL) turn treatments, noting that adequate width is available within the existing road shoulder on the George Street approach to the informally provide this treatment, in line with the existing left turn treatments into both side roads and property accesses along the remaining length of George Street / Gladstone Road.

## 5.3.2 Intersection Capacity Assessment

A capacity analysis of the operational performance of the George Street / Cambridge Street intersection under the forecast 2024 AM and PM peak post development traffic volumes has also been undertaken, with a summary of the analysis results provided in **Table 6** below, with detailed SIDRA output results included for reference as **Appendix I**.

Analysis Scenario	Intersection Degree of Saturation	Level of Service	Critical Movement Delay (sec)	Maximum 95% Back of Queue Length (m)
Pre Development				
2024 AM Peak	0.499	LOS B*	18.1	17.2m
2024 PM Peak	0.323	LOS A*	13.6	10.0m

Table 6 2024 AM & PM Peak SIDRA Results - George Street / Cambridge Street Intersection

Analysis Scenario	Intersection Degree of Saturation	Level of Service	Critical Movement Delay (sec)	Maximum 95% Back of Queue Length (m)
Post Development				
2024 PM Peak	0.499	LOS B*	18.1	17.2m
2024 PM Peak	0.323	LOS A*	13.6	10.0m

\* LOS value identified is for the critical movement, not the overall intersection (as the subject intersection is priority-controlled)

The results above indicate that the proposed development will have a negligible impact upon the operation of the George Street / Cambridge Street intersection, with no discernible change in the operation of the intersection between the pre and post development scenarios, while the intersection was also shown to operate well within acceptable limits for a priority-controlled intersection.

In accordance with the procedure outlined in DMTR's GTIA, a further assessment of impact of the proposed development upon the cumulative movement delays at the intersection has been undertaken. The results of this assessment are summarised in Table 7 and Table 8 below and reveal that the proposal is not anticipated to lead to a significant increase in the cumulative delays at the intersection.

Table 7 -	Cumulative	<b>Delays Ass</b>	essment –	2024 AM	Peak
Table 7 -	Cumulative	Delays Ass	essment –	2024 AM	Pea

CONSULTING

			2024 AM Peak		
Movement	Pre Dev Vols	Pre Dev Movement Avg Delay	Pre Dev Total Delay	Post Dev Movement Avg Delay	Post Dev Total Delay
South-East: George S	Street				
Left	56	5.6	314	5.6	314
Through	957	0.1	96	0.1	96
North-East: Cambridg	ge Street				
Left	28	6.0	168	5.9	165
North-West: George	Street				
Left	10	5.6	56	5.6	56
Through	643	0.1	64	0.1	64
Right	202	18.1	3,656	18.1	3,656
South-West: Cambrid	lge Street				
Left	58	6.8	394	6.8	394
		Total	4,748	Total	47,45
		% Differen	ce Pre and Post De	velopment	0.06%

			2024 PM Peak		
Movement	Pre Dev Vols	Pre Dev Movement Avg Delay	Pre Dev Total Delay	Post Dev Movement Avg Delay	Post Dev Total Delay
South-East: George S	Street				
Left	61	5.6	342	5.6	342
Through	812	0.1	81	0.1	81
North-East: Cambridg	ge Street				
Left	59	5.8	342	5.8	342
North-West: George	Street				
Left	4	5.6	22	5.6	22
Through	597	0.0	0	0.0	0
Right	158	13.6	2149	13.6	2149
South-West: Cambrid	lge Street				
Left	69	6.5	449	6.5	449
		Total	3385	Total	3385
		% Differen	ce Pre and Post De	velopment	0.00%

## Table 8 - Cumulative Delays Assessment – 2024 PM Peak

CONSULTING

In light of the above considerations, it is concluded that the proposed development will have a negligible impact upon the operation of the George Street / Cambridge Street intersection and that the current configuration of the intersection will be adequate to cater for the additional traffic from the proposed development.

#### 5.4 Transport Infrastructure Impact Assessment and Mitigation

5.4.1 **Public Transport Facilities** 

No works have been identified as part of the development that would be expected to impact on any existing public transport infrastructure, with none currently located in the vicinity of the site.

In light of the above, it is not anticipated that the proposed development will have any notable impact on existing public transport infrastructure or the operation of any public transport services.

#### 5.5 **Road Safety Impact Assessment and Mitigation**

As outlined in Section 2.6, no vehicle crashes have been recorded in the vicinity of the subject site within the last five (5) years. As such it can be concluded that there is no specific existing safety issue on the adjacent network that requires mitigation as part of the proposed development.

Furthermore, based on the relatively low volumes of traffic anticipated to be generated by the proposed development, the availability of sufficient carriageway width to informally provide the required basic turn treatments and the negligible impact to the operation of the proposed site access and adjacent George Street / Cambridge Street intersections, it is considered that the road safety impact of the proposed development on the surrounding road network will be minimal.

## 6.0 Conclusions and Recommendations

## 6.1 Summary of Impacts and Mitigations

## 6.1.1 Internal Facilities

The traffic elements of the proposed plan of development have been designed generally in accordance with the requirements of AS2890 and RRC's Access, Parking and Transport Code, as summarised following:

- It is proposed that the secondary/redundant existing access driveways onto Cambridge Street and Campbell Lane be closed and removed as part of the proposal. Vehicular access to the site will be provided onto Cambridge Street adjacent to the western site boundary. This access arrangement is consistent with standard practice, providing vehicular access onto the lowest order road to which a site has frontage. The access arrangement also provides the maximum separation practicable from the George Street while still maintaining appropriate access and vehicle circulation arrangement to both proposed tenancies on the subject site.
- The proposed levels of on-site car parking and queue storage (total 15 parking spaces and 21 vehicles queue storage, with further space to queue in the parking aisle if required) meet Council's requirements and are considered to be more than adequate to accommodate the anticipated demand, on this basis. Furthermore, the proposed level of on-site car parking and queue storage exceeds that recommended in the report prepared by Bitzios Consulting entitled "Trip Generation and Parking Demand Surveys of Fast Food Outlets Analysis Report".
- The design of the car parking area is in accordance with the requirements outlined in the relevant standards and guidelines and is supportable from a traffic engineering perspective.
- The proposed service vehicle arrangements are in accordance with Council's requirements and are adequate to cater for the expected service vehicle movements associated with the operation of the proposed development (i.e. up to a 10.24m long refuse collection vehicle).
- The proposed provision of 11 bicycle parking spaces is in accordance with Council's requirements and is considered to be adequate to cater for the anticipated demand from the proposed uses on site. Furthermore, adequate room to provide these facilities is expected to be available at the front of the building areas.

## 6.1.2 Traffic Impacts

In addition to the review of the internal transport facilities proposed, an assessment of the potential traffic impact of the proposed development on the external road network was also undertaken. The results of this assessment can be summarised as follows:

- The turn warrant assessment of the 2034 post development operation of the proposed site access off Cambride Street identified a requirement for basic left (BAL) and basic right (BAR) turn treatments to be provided. It was further identified that adequate width was currently available within the existing Cambridge Street carriageway to informally provide these treatments at the access.
- The capacity analyses undertaken for operation of the proposed Cambridge Street site access indicated that the access is expected to operate satisfactorily at both the year of opening (2024) and the 10-year design horizon (2034). This is demonstrated by all values for DOS, LOS, average delay and vehicle queueing calculated being well within acceptable limits of operation for a priority-controlled intersection.
- The turn warrant assessment of the left turn into Cambridge Street at George Street for 2024 post development conditions identified the recommended provision of a basic left (BAL) treatment, with adequate width noted to be available within the existing road shoulder on the George Street approach to the intersection to informally provide this treatment in line with the existing left turn treatments



into both side roads and property accesses along the remaining length of George Street / Gladstone Road.

- The results of capacity analyses of the George Street / Cambridge Street intersection indicate that the proposed development will have a negligible impact upon the operation of the George Street / Cambridge Street intersection at the proposed opening year (2024), with no discernible change in the operation between the pre and post development scenarios. Further to this, the results also indicate that the intersection is expected to operate well within acceptable limits for a priority-controlled intersection under all development scenarios assessed.
- Finally, it was also noted that the proposed development would have no impact upon the physical facilities or operation of the existing public transport and active transport facilities in the vicinity of the site.

## 6.2 Recommendations

In light of the information provided above, it is concluded that the proposed food & drink outlet development (Oporto restaurant and drive-thru coffee shop) will have a minor impact on the adjacent road network and can therefore be recommended to be approved from a traffic engineering perspective.

## 6.3 Certification Statement and Authorisation

A copy of the RPEQ certification and authorisation statement covering this assessment of the proposed development (Oporto restaurant and drive-thru coffee shop) is included for reference as **Appendix J**.



Appendix A – Prelodgement Meeting Minutes (RRC and SARA)



# PRELODGEMENT

## ADVICE

## **MEETING DETAILS**

Date	of Meeting: N/A – Written Advice	
Cour	ncil Attendees:	Applicant Attendees:
•	Kathy McDonald – Senior Planning Officer, Development Assessment	<ul> <li>Emma Laing</li> </ul>
•	Mohit Paudyal – Senior Development Engineer, Development Assessment	

## **PROPOSAL:**

Address: 65A George Street and 28-34 Cambridge Street, Rockhampton City

Real Property Description: Lot 1 on SP605704 and Lots 3, 4 and 5 on RP601157

## **Details of Proposal:**

## Issues identified by the Applicant for discussion:

- Application structure
- Layout and design
- Traffic
- Engineering
- Acoustics
- Application Material
- Any other matter

Supporting information/documentation provided by Applicant:

- Site Plan
- Sewer Diversion plan
- Vehicle Swept Path plans

## MINUTES

## PLANNING ASSESSMENT:

Defined Use: Food and Drink Outlet and Shop

**Planning Area/Zone:** Specialised centre zone, Gladstone Road and George Street precinct and residential and food services sub-precinct

Type of Application Required: Material Change in Use, Reconfiguration of a lot and Operational Works

Level of Assessment: Code

## **DEVELOPMENT ASSESSMENT:**

## Application structure

- Material Change in Use for a Food and Drink Outlet and Shop, Reconfiguration of a lot (five lots into two lots) and access easement and Operational Works for an Advertising Device (freestanding sign)
- Councils confirms level assessment would be code. Please note: a low impact industry use or health care service would not be supported in the shop tenancy as an alternative use.
- Referral to SARA (State Assessment and Referral Agency Department) is required as the subject site fronts a State Controlled Road

## Layout and design

- Council preference is to have second entry or exit access from / to George Street to alleviate the congestion in Campbell Street. Further consideration should be given for a Left in / Left out access arrangement from / to Cambridge Street.
- No verge widening required to either George Street or Cambridge Street.
- Refuse collection proposed for T1 is bit of a concern. As per the submitted drawing refuse will be collected form the drive through lane. This arrangement depends upon the hours of operations. Please provide the hours of operations for T1.
- Site Layout and Design is acceptable, Council would like to see a detailed Landscaping Plan submitted as part of the application materials.
- Ensure all plant such as air conditioners are located where they are unlikely to cause nuisance to neighbouring properties.
- Ensure any outdoor lighting are positioned & shielded to prevent glare or other nuisance within the site & neighbouring properties. Night lighting must be designed & constructed in accordance with Australian Standard AS4282 "Control of the obtrusive effects of outdoor lighting". Expect this to be conditioned on any approval.
- Food activities will require a separate food business licence application.

## Traffic

- Car parking will need to comply with Rockhampton Regional Planning Scheme requirements.
- Car parking design will need to comply with AS2890. Lighting required for parking areas.
- Accessible car parking spaces are required in accordance with BCA requirements.
- Access facility and queuing areas must comply with AS2890 requirements.
- Detailed scaled plan required which demonstrate turning movements / swept paths for the largest design vehicle given the intended use.

## Engineering

- Connection to the reticulated sewerage network will be required. All existing connections to induvial lots are
  to be disconnected. In general, building over sewerage infrastructure for commercial buildings / high
  residential dwellings (Class 2 9) will not be supported. Council's preference is to divert the existing
  sewerage infrastructure as per indicated.
- Connection to the reticulated water supply will be required. All existing connections to induvial lots are to be disconnected and a new connection(s) will need to be provided. Water supply connection is to be provided from 100mm main located within George Street or Cambridge Street. Hydraulic consultant to determine size of the connection required. Adequate domestic and fire-fighting protection will need to be provided to the site.
- Council is unable to confirm the depth of the water main along Cambridge St (installed 1936)
- There is an existing 100mm and 600mm diameter water main within the southern side of the Cambridge Street. Further, 100mm diameter water main is located within the eastern side of the George Street. May need to install a fire-hydrant on 100mm water main located within the southern side of Cambridge Street.
- As per QUDM and CMDG, internal stormwater system needs to be designed as Level V drainage. A sitebased Stormwater Management Plan would be required to confirm proposed detention and new kerb gully pit (existing 2 pits along Cambridge st)

 The development site is located within South Rockhampton Local Catchment and is affected by 1% AEP Local Storm / Overland Flow flooding event. The depth of the flood water is less than 300mm and is located within Low (H1) hazard area. An appropriate assessment of the flood is to be taken into account in the stormwater management plan and the design of the site.

## Acoustics

 Councils confirms a 2m high acoustic fence would be appropriate along the full boundary line of adjoining residential use Lot 1 on RP602015. No transparent components required.

## **Application Materials**

- A detailed Waste Management report is required for the development outlining type of wastes, quantity, removal methods, bin storage areas, bin types, details of bin wash down areas etcetera.
- A site-based Stormwater Management Plan will be required outlining quantity. Water quality to be in accordance with the State Planning Policy. As per SPP, 2500m<sup>2</sup> is the threshold for the water quality and the site area proposed is 2,019m2 so quality is not required.
- Traffic Impact Assessment report is required reviewing the traffic related aspects of the development including traffic impacts on the road network, internal access layout, parking provision, servicing provision, access / Cambridge Street and Cambridge Street / George Street intersection assessment, safety etc.
- Landscape concept plan
- Site Plan, use areas and elevations
- Assessment against the following applicable code:
  - Specialised centre zone code
  - Access, parking and transport code
  - Landscape code
  - o Stormwater management code
  - Waste management code
  - Water and sewer code

## Infrastructure Charges (not including actual charges)

The Adopted Infrastructure Charges are available to view on Council's Website. These are located in the Fees and Charges Section. Please see the link below.

http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Infrastructure-Charges

## OUTCOME SUMMARY:

The proposed development is consistent with the purpose of the Specialised centre zone, therefore, Council officers are supportive of the proposal subject to the requirements of the Planning Scheme being addressed.

## ADVISORY NOTE:

These notes have been provided as informal and non binding comments and are intended for use as a guide only in providing feedback on the proposal presented to the Unit. These discussions do not bind or fetter the Council in any way in exercising its statutory responsibilities in assessing any development application which might be made to the Council.

Link to DA Forms

https://planning.dsdmip.qld.gov.au/planning/better-development/application-forms-and-templates Link to Planning Schemes

http://www.rockhamptonregion.qld.gov.au/Planning-and-Building/Planning-Schemes-and-Studies

Link to Development Assessment Fees

http://www.rockhamptonregion.qld.gov.au/About-Council/Finance-Rates-and-Budget/Fees-and-Charges



Department of **Transport and Main Roads** 

Our ref TMR23-040175 Your ref . Enquiries Brett Skyring

31 August 2023

Rockhampton Regional Council PO Box 1860 Rockhampton City QLD 4700

Attention: .

Dear Sir/Madam

## Advice about a Development Application

Proposed Development:	<ul> <li>Material change of use for food and drink outlet and shop</li> <li>Reconfiguration of a lot - 5 into 2 lots and access easements</li> <li>Operational work for advertising devices (pylon)</li> </ul>
Real Property Description:	Lot 4RP601157, 5RP601157, 2RP605704, 1RP605704, 3RP601157
Street Address:	34 Cambridge Street, rockhampton QLD 4700
Assessment Manager ref.:	2308-36324 SPL Request for pre-application advice
Local Government Area:	Rockhampton Regional Council

Reference is made to your request for advice from the Department of Transport and Main Roads (the department) in relation to the abovementioned development application.

The department has conducted a preliminary review of the proposed development and determined the following matters require consideration by the applicant prior to lodgement of the application (some of which are within the state interest of the department and others are general comments on the proposed development):

- 1. The internal and external swept paths appear to indicate potential for a clash of movement between inbound and exiting small vehicles, particularly into the drive through area. The dimensions of the driveway may require revision.
- The layout of the development indicates the proponent has an expectation of high traffic volumes through the drive through facility. There is a potential for queueing to occur on to Cambridge Street which may affect the operational safety and efficiency of the intersection with George Street.

- a. Based on the 2022 AADT for George Street to be 15738 Vehicle per day the proposed development application must include a detailed Traffic Impact Assessment (TIA) prepared in accordance with TMR's Guide to Traffic Impact Assessment (GTIA) and be signed by a RPEQ. The TIA must undertake a SIDRA assessment for the intersection of George Street and Cambridge Street.
- b. If required, the proposed development application must provide an RPEQ engineering design report and drawings for the upgrading the intersection of George Street and Cambridge Street.
- c. The proponent must identify, mitigate, and demonstrate road infrastructure (including bicycle and footpath) and public utility impacts.
- d. The proposed development must ensure that pedestrian facilities along the frontage of the development on George Street (southbound) meet the requirements of TMR Standard Drawing 1446.
- e. The proponent may need to consider amending the layout of the development to minimise the opportunity for queueing on to Cambridge Street.
- 3. The proposed development intensifies the area of impervious surface on this site. The proponent must provide a detailed RPEQ signed Stormwater Management Plan demonstrating no worsening impacts onto the state-controlled road network / infrastructure.
- 4. The proposed development may encourage un-approved right turn movements from George Street into Cambridge Street (North). The proponent is requested to consider any treatment options at the existing channelised-right-turn facility into Cambridge Street (South) to minimise the opportunity for right turn movements.
- 5. The developer is required to provide luminosity details and dimensions of the proposed advertising device in the development application.

Should you have any queries regarding the above, please do not hesitate to contact Brett Skyring, Manager (Project Planning and Corridor Management) on (07) 4931 1532.

Yours sincerely

Brett Skyring Manager (Project Planning and Corridor Management)



Appendix B – Intersection Count (George Street / Cambridge Street)

#### AUSTRAFFIC INTERSECTION COUNT

 Site No.:
 1
 Weather: Fine

 Location:
 George Street/Cambridge Street, Rockhampton

 Day/Date:
 Tuesday, 20 June 2023

 AM Peak:
 Hour ending 8:45 AM

 PM Peak:
 Hour ending 5:30 PM



TIME	Movement 1					Movement 3					Move	ment 4		Movement 5				Movement 6					Move	ment 7		Movement 8						
(1/4 hr end)	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists
6:15 AM	0	0	0	0	16	3	19	0	60	15	75	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	22	2	24	0	63	12	75	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
6:45 AM	0	0	0	0	9	0	9	0	47	11	58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0
7:00 AM	0	0	0	0	33	1	34	0	74	18	92	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	5	0
7:15 AM	0	0	0	0	21	1	22	0	61	15	76	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0
7:30 AM	0	0	0	0	37	0	37	0	98	20	118	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	4	0
7:45 AM	0	0	0	0	37	0	37	0	89	14	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4	0
8:00 AM	0	0	0	0	35	0	35	0	82	21	103	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
8:15 AM	0	0	0	0	51	0	51	0	105	15	120	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0
8:30 AM	0	0	0	0	35	1	36	0	124	28	152	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
8:45 AM	0	0	0	0	35	0	35	0	109	15	124	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0
9:00 AM	0	0	0	0	22	0	22	0	79	18	97	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0
3 hr Tota	0	0	8	8	353	8	361	8	166	202	1193	-	14	e	17	8	0	0	8		0	8	0	0	0	8	8	2	46		40	
AM Peak	0	0	0	0	156	÷	157	0	420	62	499	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	0

TIME		Move	ment 1			Move	ment 2		Movement 3					Move	ment 4			Move	ment 5			Move	ment 6			Move	ment 7		Movement 8			
(1/4 hr end)	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists
3:15 PM	0	0	0	0	24	0	24	0	135	22	157	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0
3:30 PM	0	0	0	0	23	0	23	0	107	15	122	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	0
3:45 PM	0	0	0	0	19	0	19	0	128	12	140	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	4	0
4:00 PM	0	0	0	0	23	0	23	0	88	15	103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0
4:15 PM	0	0	0	0	20	0	20	0	110	15	125	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0
4:30 PM	0	0	0	0	24	0	24	0	90	9	99	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0
4:45 PM	0	0	0	0	28	0	28	0	109	10	119	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	16	0
5:00 PM	0	0	0	0	32	0	32	0	103	7	110	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0
5:15 PM	0	0	0	0	29	2	31	0	111	11	122	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	0
5:30 PM	0	0	0	0	31	1	32	0	103	9	112	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	0
5:45 PM	0	0	0	0	26	0	26	0	93	13	106	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	0
6:00 PM	0	0	0	0	23	0	23	0	62	8	70	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0
3 hr Total	0	ō	0	ō	302	e.	305	0	1239	146	1385	N	6	ō	6	ō	ō	ō	Ö	0	ō	0	0	ō	0	0	0	-	66	ō	66	0
PM Peak	0	0	0	0	120	e	123	0	426	37	463	0	ю	0	e	0	0	0	0	0	0	0	0	0	0	0	0	0	46	0	46	0

#### AUSTRAFFIC INTERSECTION COUNT

 Site No.:
 1
 Weather: Fine

 Location:
 George Street/Cambridge Street, Rockhampton

 Day/Date:
 Tuesday, 20 June 2023

 AM Peak:
 Hour ending - 8:45 AM

 PM Peak:
 Hour ending - 5:30 PM



TIME	Movement 9			Movement 9 Movement 10				Movement 11					Mover	nent 12			Moven	nent 13			Moven	nent 14			Moven	nent 15			Moven	nent 16		Ped	estrian	Moveme	ents	
(1/4 hr end)	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Oydists	Light Vehicles	Heavy Vehicles	Total	Cydists	Light Vehicles	Heavy Vehicles	Total	Cyclists	A	в	с	D
6:15 AM	0	0	0	0	0	0	0	0	55	9	64	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	3
6:30 AM	0	0	0	0	0	0	0	0	54	18	72	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	0	98	11	109	0	5	2	7	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	5	2
7:00 AM	0	0	0	0	0	0	0	0	76	11	87	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	1	0	1	5
7:15 AM	0	0	0	0	0	0	0	0	85	9	94	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	1	0	1	1
7:30 AM	0	0	0	0	0	0	0	0	103	15	118	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7	1	8	0	0	3	0	0
7:45 AM	0	0	0	0	0	0	0	0	126	10	136	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	2	1	2
8:00 AM	0	0	0	0	0	0	0	0	178	13	191	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	0	0	3	3	4
8:15 AM	0	0	0	0	0	0	0	0	167	20	187	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	6	3
8:30 AM	0	0	0	0	0	0	0	0	181	18	199	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	0	1	1	0	0
8:45 AM	0	0	0	0	0	0	0	0	157	9	166	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	0	3	2	3
9:00 AM	0	0	0	0	0	0	0	0	129	12	141	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	1	1	0	1
3 hr Total	0	0	0		0	8	0		1409	155	1564	-	65		68	0	0	0	3	0	Ô	8	•	0	0	0	0	0	97	2	66	0	4	13	19	24
AM Peak	0	0	0	0	0	0	0	0	683	09	743	0	43	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	45	0	+	7	11	10

TIME	Movement 9 Movement 10				Movement 11					Moven	nent 12			Mover	nent 13			Moven	nent 14			Mover	ment 15			Mover	nent 16		Peo	lestrian í	Moveme	nts				
(1/4 hr end)	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	Light Vehicles	Heavy Vehicles	Total	Cyclists	A	в	с	D
3:15 PM	0	0	0	0	0	0	0	0	133	16	149	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	1	34	0	34	0	3	5	0	4
3:30 PM	0	0	0	0	0	0	0	0	140	18	158	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0	3	5
3:45 PM	0	0	0	0	0	0	0	0	139	16	155	1	7	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	15	3	18	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	129	17	146	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	0	1	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	136	14	150	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	1	1	1
4:30 PM	0	0	0	0	0	0	0	0	146	14	160	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	17	0	0	4	1	1
4:45 PM	0	0	0	0	0	0	0	0	158	16	174	0	4	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	20	1	21	0	2	1	0	4
5:00 PM	0	0	0	0	0	0	0	0	146	17	163	1	13	1	14	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	141	16	157	0	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	0	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	132	4	136	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	11	0	0	0	2	0
5:45 PM	0	0	0	0	0	0	0	0	105	11	116	1	22	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	0	0	1	0	2
6:00 PM	0	0	0	0	0	0	0	0	94	9	103	1	26	0	26	0	0	0	0	0	0	0	0	0	0	0	0	1	13	0	13	0	4	2	5	3
3 hr Total	0	0	0	D	0	0	0		1599	168	1767	4	138	2	140		0	0	0	0	0	0	0	0	0	0	0	5	178	LO LO	183	0	10	4	12	54
PM Peak	0	0	0	0	0	0	0	0	577	53	630	1	46	-	47	0	0	0	0	0	0	0	0	0	0	0	0	0	52	2	54	0	2	-	2	7



Appendix C – SIDRA Results Existing Conditions

## **MOVEMENT SUMMARY**

# Site: 1 [EXIST 2023 AM (Site Folder: 1. Cambridge St / George St)]

## Output produced by SIDRA INTERSECTION Version: 9.1.4.221

George Street / Cambridge Street Existing Intersection Configuration

Site Category: NA Stop (Two-Way) Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance Mov Turn Mov 95% Back Of Demand Arrival Deg. Aver. Level of Prop. Eff. ID Class Satn Stop Rate Flows Flows [ Total HV ] [ Total HV ] veh/h % veh/h % Delay No. of Queue Que Speed [ Veh veh SouthEast: Goerge Street 54 0.0 0.265 LOS A 0.0 0.00 0.07 0.00 56.8 21 L2 All MCs 54 0.0 5.6 0.0 4 T1 All MCs 0.0 939 8.1 939 8.1 0.265 0.1 LOS A 0.0 0.00 0.03 0.00 59.5 Approach 993 7.6 993 7.6 0.265 0.4 NA 0.0 0.0 0.00 0.03 0.00 59.4 NorthEast: Cambridge Street L2 All MCs 28 0.0 28 0.0 0.029 5.9 LOS A 0.1 0.7 0.38 0.56 0.38 48.4 1 Approach 28 0.0 28 0.0 0.029 5.9 LOS A 0.7 0.38 0.56 0.38 48.4 0.1 NorthWest: George Street 10 0.0 0.179 LOS A 0.00 0.02 0.00 2 L2 All MCs 10 0.0 5.6 0.0 0.0 57.2 LOS A 0.00 0.01 3 T1 All MCs 630 15.8 630 15.8 0.179 0.0 0.0 0.0 0.00 59.8 29 R2 All MCs 198 0.6 198 0.6 0.474 17.3 LOS B 2.3 16.1 0.82 1.03 1.19 45.3 0.28 0.474 839 12.0 839 12.0 4.2 2.3 16.1 0.19 0.25 55.5 Approach NA SouthWest: Cambridge Street 0.46 L2 All MCs 57 0.0 0.069 6.8 LOS A 0.2 1.7 0.46 0.65 48.0 30 57 0.0 Approach 57 0.0 57 0.0 0.069 6.8 LOS A 0.2 1.7 0.46 0.65 0.46 48.0 All Vehicles 1916 9.2 1916 9.2 0.474 NA 0.10 0.15 2.3 2.3 16.1 0.14 57.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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## **MOVEMENT SUMMARY**

# Site: 1 [EXIST 2023 PM (Site Folder: 1. Cambridge St / George St)]

## Output produced by SIDRA INTERSECTION Version: 9.1.4.221

George Street / Cambridge Street Existing Intersection Configuration

Site Category: NA Stop (Two-Way) Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance Mov Turn Mov 95% Back Of Demand Arrival Deg. Aver. Level of Prop. Eff. ID Class Satn Stop Rate Flows Flows [ Total HV ] [ Total HV ] veh/h % veh/h % Delay No. of Queue Que Speed ſ Veh veh SouthEast: Goerge Street 59 2.1 0.229 LOS A 0.0 0.00 0.08 0.00 21 L2 All MCs 59 2.1 5.6 0.0 56.6 4 T1 All MCs 0.0 796 8.4 796 8.4 0.229 0.1 LOS A 0.0 0.00 0.04 0.00 59.5 Approach 855 8.0 855 8.0 0.229 0.5 NA 0.0 0.0 0.00 0.04 0.00 59.3 NorthEast: Cambridge Street 1 L2 All MCs 58 0.0 58 0.0 0.059 5.8 LOS A 0.2 1.5 0.36 0.56 0.36 48.4 Approach 58 0.0 58 0.0 0.059 5.8 LOS A 0.2 1.5 0.36 0.56 0.36 48.4 NorthWest: George Street 4 0.0 4 0.0 LOS A 0.00 0.01 0.00 2 L2 All MCs 0.157 5.6 0.0 0.0 57.4 LOS A 0.00 0.00 3 T1 All MCs 585 8.0 0.157 0.0 0.0 0.0 0.00 59.9 585 8.0 29 R2 All MCs 155 2.4 155 2.4 0.309 13.2 LOS A 1.3 9.5 0.72 0.92 0.87 47.6 744 6.8 744 6.8 0.309 2.8 NA 1.3 9.5 0.15 0.20 0.18 56.8 Approach SouthWest: Cambridge Street 0.42 L2 All MCs 68 3.7 0.078 6.4 LOS A 0.3 2.0 0.42 0.61 48.1 30 68 3.7 Approach 68 3.7 68 3.7 0.078 6.4 LOS A 0.3 2.0 0.42 0.61 0.42 48.1 All Vehicles 1725 7.0 1725 7.0 0.309 NA 0.09 0.15 1.9 1.3 9.5 0.11 57.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Appendix D – Plans of Proposed Development

# ARCHITECTURAL DA DRAWINGS PROPOSED MIXED USE DEVELOPMENT 65 GEORGE ST, ROCKHAMPTON



D	DA ARCHITECTURAL DRAWINGS										
DRG No.	DRAWING TITLE										
DA00	COVER PAGE										
DA01	EXISTING SITE PLAN										
DA02	PROP. SITE PLAN										
DA03	BUILDING ELEVATIONS & PERSPECTIVES										
DA04	BUILDING ELEVATIONS & PERSPECTIVES										
DA05	BUILDING ELEVATIONS & PERSPECTIVES										
DA06	BUILDING ELEVATIONS & PERSPECTIVES										
DA07	SITE ELEVATIONS & PERPECTIVES										
DA08	PROPOSED LOT PLAN										

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Project Description PROPOSED MI	XED USE DEVELOPMENT	Drawing Title COVER PAGE						
65 GEORGE S	F, ROCKHAMPTON							
65 GEORGE S Gcale @A1	T, ROCKHAMPTON Date AUGUST 2023	Job Number - Drawing Number		Revision				



# ISSUE DA THIS DRAWING IS NOT FOR CONSTRUCTION







Project Description PROPOSED MIXED USE 65 GEORGE ST, ROCKI	E DEVELOPMENT HAMPTON	EXISTING / DE	MO PLAN	
Scale 1:200@A1 / 1:400@A3	Approved	Drawing Number		Revision
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<u>RPD</u>	
LOT 3-5 on RP601157 LOT 1-2 on RP605704 ROCKHAMPTON REGIONAL COUNCIL	
DEVELOPMENT ASSESSMENT	
APPROX. SITE AREA	- 2,014.5m2
PROP. LOT 1 INCLUDING ACCESS EASEMENT	– 1,064.5m2
PROP. LOT 2 INCLUDING ACCESS EASEMENT	- 950m2
STAGE 1 - BUILDING AREAS (GFA	()
• T1 - FOOD & DRINK	- 183m²
MISCELLANEOUS AREAS	
• T1 - REFUSE WITHIN BUILDING FOOTPRINT	- 10.5m²
STAGE 2 - BUILDING AREAS (GFA	<b>A</b> )
• T2 - FOOD & DRINK	- 150m²
MISCELLANEOUS AREAS	
• T2 - REFUSE/SERVICES	– 15.5m²
CAR PARKING	
• LOT 1 CAR PARKING REQUIRED	- 6
LOT 2 CAR PARKING REQUIRED	- 5
• TOTAL CAR PARKING REQUIRED FOOD & DRINK 1/15m <sup>2</sup> SEATING GFA	- 11
CAR PARKING PROVIDED	- 15
IMPERVIOUS AREA	
PRE DEVELOPMENT	- 481m²
• POST DEVELOPMENT	- 1707m²
LANDSCAPE AREA	
PRE DEVELOPMENT	- 1533.5m²
POST DEVELOPMENT	- 307.5m²
FENCE KEY	
2.0m(H) ACOUSTIC BARRIER	

Drawing Title PROPOSED SITE PLAN Project Description Dwn PROPOSED MIXED USE DEVELOPMENT 65 GEORGE ST, ROCKHAMPTON Scale Drawing Number 1:200@A1 / 1:400@A3 22091-DA02 В Drawn lssued



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- 2. ALL DIMENSIONS MEASURED FROM FINISHED GROUND FLOOR LEVEL UNLESS NOTED OTHERWISE
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CAMBRIDGE STREET

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- 4. LANDSCAPING IS SHOWN FOR "ARTIST IMPRESSION" PURPOSES ONLY. REFERENCE SHOULD BE MADE TO THE LANDSCAPE DRWAINGS PREPARED BY THE RELEVANT CONSULTANT

# EXAMPLE FINISHES FINAL PAINT COLOURS SUBJECT TO CHANGE





VERTICAL FC CLADDING







PAINT FINISH RED

PAINT FINISH BLACK

PAINT FINISH GREY

Date AUGUST 2023 Job Number - Drawing Number Revision 22091 DA05 С Approved By SS





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	RVE		fast food restaurant design	VERVE BUILDING DESIGN and must not be	Α	20.10.2023	TM	DA ISSUE	SS	
BUILDI	NG DESIGN CO.			used or duplicated without authorisation.	В	27.10.2023	TM	DA ISSUE	SS	65 G
			travel centre / service stations	Do not scale this drawing.	C	06.11.2023	TM	DA ISSUE	SS .	
	PH. (07) 3857 0942									Scale (0) As
HE 4030	E: info@vervebd.com.au		project concept to completion	Check all dimensions on site prior						Drawn
te 🗆 deliver	deliver			commencement of works						TM

# ISSUE DA THIS DRAWING IS NOT FOR CONSTRUCTION

## NOTE:

- 1. ALL EXTERNAL MATERIALS & FINISHES SHOWN INDICATIVE ONLY & SUBJECT TO FINAL TENANT STANDARDS
- 2. ALL DIMENSIONS MEASURED FROM FINISHED GROUND FLOOR LEVEL UNLESS NOTED OTHERWISE
- 3. ALL SIGNAGE INCLUSING LOCATIONS & HEIGHTS ARE SUBJECT TO A SEPERATE SIGNAGE APPLICATION & APPROVAL BY LOCAL AUTHORITY
- 4. LANDSCAPING IS SHOWN FOR "ARTIST IMPRESSION" PURPOSES ONLY. REFERENCE SHOULD BE MADE TO THE LANDSCAPE DRWAINGS PREPARED BY THE RELEVANT CONSULTANT

## EXAMPLE FINISHES FINAL PAINT COLOURS SUBJECT TO CHANGE





VERTICAL FC CLADDING

EXPRESS JOINT FC CLADDING





PAINT FINISH RED

Approved By SS

PAINT FINISH BLACK

22091

PAINT FINISH GREY

DA06 C



NOTED. 4. ALL AREAS ARE GROSS AREAS, UNLESS NOTED OTHERWISE

SET.

<u>NOTE:</u> 1. ALL EXTERNAL MATERIALS & FINISHES SHOWN INDICATIVE ONLY & SUBJECT TO FINAL TENANT STANDARDS

2. ALL DIMENSIONS MEASURED FROM FINISHED GROUND FLOOR LEVEL UNLESS NOTED OTHERWISE 3. ALL SIGNAGE INCLUSING LOCATIONS & HEIGHTS ARE



PROPOSED MIXED US	SE DEVELOPMENT	SITE ELEVATION	DNS &		
55 GEORGE ST, ROC	KHAMPTON	PERPECTIVES			
icale @A1 As indicated Irawn TM	Date AUGUST 2023 Approved By SS	Job Number - Drawing Number 22091	DA07	Revision C	_





# RPD

LOT 3–5 on RP601157 LOT 1–2 on RP605704 ROCKHAMPTON REGIONAL COUNCIL



D.A ISSUE

DEVELOPMENT ASSESSMENT

## APPROX. SITE AREA - 2,014.5m2

PROP. LOT 1 INCLUDING ACCESS EASEMENT

PROP. LOT 2 INCLUDING ACCESS EASEMENT – 950m2

- 1,064.5m2



roject Description PROPOSED MIXED USE DEVELOPMENT 55 GEORGE ST, ROCKHAMPTON		PROPOSED LOT PLAN					
cale :200@A1 / 1:400@A3	Approved	Drawing Number	Revision				
rawn	Issued	22091-DA08	ΙA				



Appendix E – Vehicle Tracking Diagram (Drive Through – B99)







Appendix F – Vehicle Tracking Diagram (Servicing Area)











Appendix G – Turn Warrant Assessments



#### **Turn Warrant Assessment**

# Intersection: Cambridge Street / Proposed Site Access Year / Peak: 2034 AM & PM Peak Scenario: Post Development

Assessment based on Austroads Guide to Traffic Management Part 6. This warrant assessment applies only to turning movements from the major road only.



		Lege	gend			
Recommended treatment	nents:	ed treatments: BAR	R	Basic Right Turn	BAL	Basic Left Tu
Right Turn	BAR	urn BAR CHE	R(S)	Channelised Right Turn (short)	AUL(S)	Auxiliary Left
Left Turn	BAL	Im BAL CHE		Channelised Pight Turn		
				Channelised Right Turn	AUL	Auxiliary Leit
					CHL	Channelised

#### Comments:

Based on figure above, it can be seen that the forecast 2034 peak hour post development traffic volumes at the proposed site access on Cambridge Street warrant the provision of basic right (BAR) and basic left (BAL) turn treatments, noting that sufficient width is available within the existing Cambridge Street carriageway to accommodate the required width for the treatments.

Prepared by:	A.Barrie
Reviewed by:	A.Barrie
Date:	18/10/2023



#### **Turn Warrant Assessment**

#### Intersection: George Street / Cambridge Street

#### Year / Peak: 2024 Development PM Peak

#### Scenario: Post Development

0

0

Assessment based on Austroads Guide to Traffic Management Part 6. This warrant assessment applies only to turning movements from the major road only.



		Legend			
Recommended treatm	ents:	BAR	Basic Right Turn	BAL	Basic Left Turn
Right Turn	-	CHR(S)	Channelised Right Turn (short)	AUL(S)	Auxiliary Left Turn (short)
Left Turn	BAL	CHR	Channelised Right Turn		Auxiliary Left Turn
		OTIN	Sharmensed Right Fam	NOL	
_				CHL	Channelised Left Turn

#### Comments:

Based on figure above, it can be seen that the forecast post development traffic volumes at the George Street / Cambridge Street warrant the provision of basic left (BAL) turn treatments, noting that adequate width is available within the existing road shoulder on the George Street approach to the informally provide this treatment, in line with the existing left turn treatments into both side roads and property accesses along the remaining length of George Street / Gladstone Road.

Prepared by:	A.Barrie
Reviewed by:	A.Barrie
Date:	18/10/2023



Appendix H – SIDRA Results Cambridge Street / Site Access

# V Site: 2 [POST DEV 2024 AM (Site Folder: 2. Cambridge St / Site Access)]

#### Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Cambridge Street / Development Access Proposed Intersection Configuration Site Category: NA Give-Way (Two-Way)

Vehic	le M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr Fl [ Total veh/h	nand lows HV ] %	Ar F∣ [ Total veh/h	rival lows HV ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% I Qu [ Veh. veh	Back Of Jeue Dist ] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Cam	ibridge St	reet												
1	L2	All MCs	25	0.0	25	0.0	0.016	2.9	LOS A	0.0	0.0	0.00	0.40	0.00	17.7
2	T1	All MCs	8	0.0	8	0.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	46.9
Appro	ach		34	0.0	34	0.0	0.016	2.2	NA	0.0	0.0	0.00	0.40	0.00	23.5
North:	Cam	bridge St	reet												
8	T1	All MCs	23	0.0	23	0.0	0.026	0.1	LOS A	0.1	0.8	0.10	0.29	0.10	42.1
9	R2	All MCs	25	0.0	25	0.0	0.026	5.6	LOS A	0.1	0.8	0.10	0.29	0.10	32.9
Appro	ach		48	0.0	48	0.0	0.026	3.0	NA	0.1	0.8	0.10	0.29	0.10	36.7
West:	Deve	lopment A	Access												
10	L2	All MCs	21	0.0	21	0.0	0.037	2.9	LOS A	0.1	0.9	0.06	0.50	0.06	34.8
12	R2	All MCs	29	0.0	29	0.0	0.037	3.1	LOS A	0.1	0.9	0.06	0.50	0.06	27.7
Appro	ach		51	0.0	51	0.0	0.037	3.0	LOS A	0.1	0.9	0.06	0.50	0.06	31.4
All Vel	hicles		133	0.0	133	0.0	0.037	2.8	NA	0.1	0.9	0.06	0.40	0.06	31.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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# V Site: 2 [POST DEV 2024 PM (Site Folder: 2. Cambridge St / Site Access)]

#### Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Cambridge Street / Development Access Proposed Intersection Configuration Site Category: NA Give-Way (Two-Way)

Vehic	le M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [ Total veh/h	nand Iows HV] %	Ar Fl [ Total ] veh/h	rival lows HV ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Qı [ Veh. veh	Back Of ueue Dist ] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Cam	bridge St	reet												
1	L2	All MCs	13	0.0	13	0.0	0.008	2.9	LOS A	0.0	0.0	0.00	0.43	0.00	17.5
2	T1	All MCs	3	0.0	3	0.0	0.008	0.0	LOS A	0.0	0.0	0.00	0.43	0.00	46.3
Appro	ach		16	0.0	16	0.0	0.008	2.3	NA	0.0	0.0	0.00	0.43	0.00	22.1
North:	Cam	bridge St	reet												
8	T1	All MCs	49	0.0	49	0.0	0.032	0.0	LOS A	0.1	0.6	0.03	0.13	0.03	50.5
9	R2	All MCs	15	0.0	15	0.0	0.032	5.6	LOS A	0.1	0.6	0.03	0.13	0.03	37.7
Appro	ach		64	0.0	64	0.0	0.032	1.3	NA	0.1	0.6	0.03	0.13	0.03	46.9
West:	Deve	lopment A	Access												
10	L2	All MCs	12	0.0	12	0.0	0.020	2.9	LOS A	0.1	0.5	0.04	0.51	0.04	35.0
12	R2	All MCs	16	0.0	16	0.0	0.020	3.0	LOS A	0.1	0.5	0.04	0.51	0.04	27.9
Appro	ach		27	0.0	27	0.0	0.020	3.0	LOS A	0.1	0.5	0.04	0.51	0.04	31.7
All Ve	hicles		107	0.0	107	0.0	0.032	1.9	NA	0.1	0.6	0.03	0.27	0.03	38.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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# V Site: 2 [POST DEV 2034 AM (Site Folder: 2. Cambridge St / Site Access)]

#### Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Cambridge Street / Development Access Proposed Intersection Configuration Site Category: NA Give-Way (Two-Way)

Vehic	le Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [ Total veh/h	nand lows HV ] %	Ar Fl [ Total ] veh/h	rival lows HV ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95%   Qu [ Veh. veh	Back Of Jeue Dist ] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Cam	bridge St	reet												
1	L2	All MCs	25	0.0	25	0.0	0.017	2.9	LOS A	0.0	0.0	0.00	0.38	0.00	17.8
2	T1	All MCs	11	0.0	11	0.0	0.017	0.0	LOS A	0.0	0.0	0.00	0.38	0.00	47.5
Appro	ach		36	0.0	36	0.0	0.017	2.0	NA	0.0	0.0	0.00	0.38	0.00	24.9
North:	Cam	bridge St	reet												
8	T1	All MCs	28	0.0	28	0.0	0.028	0.1	LOS A	0.1	0.8	0.10	0.27	0.10	43.2
9	R2	All MCs	25	0.0	25	0.0	0.028	5.7	LOS A	0.1	0.8	0.10	0.27	0.10	33.5
Appro	ach		54	0.0	54	0.0	0.028	2.7	NA	0.1	0.8	0.10	0.27	0.10	38.0
West:	Deve	lopment A	Access												
10	L2	All MCs	21	0.0	21	0.0	0.037	2.9	LOS A	0.1	0.9	0.07	0.50	0.07	34.7
12	R2	All MCs	29	0.0	29	0.0	0.037	3.2	LOS A	0.1	0.9	0.07	0.50	0.07	27.6
Appro	ach		51	0.0	51	0.0	0.037	3.1	LOS A	0.1	0.9	0.07	0.50	0.07	31.4
All Ve	hicles		140	0.0	140	0.0	0.037	2.7	NA	0.1	0.9	0.06	0.38	0.06	32.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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# V Site: 2 [POST DEV 2034 PM (Site Folder: 2. Cambridge St / Site Access)]

#### Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Cambridge Street / Development Access Proposed Intersection Configuration Site Category: NA Give-Way (Two-Way)

Vehic	le Mo	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Dem Fl [ Total veh/h	nand lows HV] %	Ar Fl [ Total ] veh/h	rival lows HV ] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95%   Qו [ Veh. veh	Back Of Jeue Dist ] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South	: Cam	bridge St	reet												
1	L2	All MCs	13	0.0	13	0.0	0.008	2.9	LOS A	0.0	0.0	0.00	0.40	0.00	17.7
2	T1	All MCs	4	0.0	4	0.0	0.008	0.0	LOS A	0.0	0.0	0.00	0.40	0.00	46.9
Appro	ach		17	0.0	17	0.0	0.008	2.2	NA	0.0	0.0	0.00	0.40	0.00	23.5
North:	Cam	bridge St	reet												
8	T1	All MCs	60	0.0	60	0.0	0.037	0.0	LOS A	0.1	0.6	0.03	0.11	0.03	51.6
9	R2	All MCs	15	0.0	15	0.0	0.037	5.6	LOS A	0.1	0.6	0.03	0.11	0.03	38.3
Appro	ach		75	0.0	75	0.0	0.037	1.1	NA	0.1	0.6	0.03	0.11	0.03	48.3
West:	Deve	lopment A	Access												
10	L2	All MCs	12	0.0	12	0.0	0.020	2.9	LOS A	0.1	0.5	0.04	0.50	0.04	34.9
12	R2	All MCs	16	0.0	16	0.0	0.020	3.1	LOS A	0.1	0.5	0.04	0.50	0.04	27.9
Appro	ach		27	0.0	27	0.0	0.020	3.0	LOS A	0.1	0.5	0.04	0.50	0.04	31.6
All Ve	hicles		119	0.0	119	0.0	0.037	1.7	NA	0.1	0.6	0.03	0.24	0.03	40.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Appendix I – SIDRA Results George Street / Cambridge Street

# Site: 1 [PRE DEV 2024 AM (Site Folder: 1. Cambridge St / George St)]

#### Output produced by SIDRA INTERSECTION Version: 9.1.4.221

George Street / Cambridge Street Existing Intersection Configuration

### Site Category: NA

Stop (Two-Way) Design Life Analysis (Final Year): Results for 10 years

Vehic	Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Dem F [ Total	nand lows HV ]	Ar Fl [ Total	rival lows HV ]	Deg. Satn	Aver. Delay	Level of Service	95% E Qu [ Veh.	Back Of Ieue Dist ]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
South	East:	Goerge S	Street	70	ven/n	70	V/C	sec		ven	111	_	_	_	KIII/II
21	L2	All MCs	56	0.0	56	0.0	0.270	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.8
4	T1	All MCs	957	8.0	957	8.0	0.270	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.5
Appro	ach		1013	7.6	1013	7.6	0.270	0.4	NA	0.0	0.0	0.00	0.03	0.00	59.4
North	East:	Cambridg	je Stree	t											
1	L2	All MCs	28	0.0	28	0.0	0.029	6.0	LOS A	0.1	0.7	0.38	0.56	0.38	48.3
Appro	ach		28	0.0	28	0.0	0.029	6.0	LOS A	0.1	0.7	0.38	0.56	0.38	48.3
North\	Nest:	George S	Street												
2	L2	All MCs	10	0.0	10	0.0	0.183	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.2
3	T1	All MCs	643	15.9	643	15.9	0.183	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
29	R2	All MCs	202	0.6	202	0.6	0.499	18.1	LOS B	2.4	17.2	0.83	1.04	1.25	44.8
Appro	ach		855	12.1	855	12.1	0.499	4.4	NA	2.4	17.2	0.20	0.25	0.29	55.4
South	West	Cambrid	ge Stre	et											
30	L2	All MCs	58	0.0	58	0.0	0.072	6.8	LOS A	0.3	1.8	0.47	0.65	0.47	48.0
Appro	ach		58	0.0	58	0.0	0.072	6.8	LOS A	0.3	1.8	0.47	0.65	0.47	48.0
All Ve	hicles		1954	9.2	1954	9.2	0.499	2.4	NA	2.4	17.2	0.11	0.16	0.15	57.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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# Site: 1 [PRE DEV 2024 PM (Site Folder: 1. Cambridge St / George St)]

#### Output produced by SIDRA INTERSECTION Version: 9.1.4.221

George Street / Cambridge Street Existing Intersection Configuration

### Site Category: NA

Stop (Two-Way) Design Life Analysis (Final Year): Results for 10 years

Vehic	Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Den F [ Total	nand lows HV ]	Ar Fl [ Total	rival ows HV ]	Deg. Satn	Aver. Delay	Level of Service	95% B Qu [ Veh.	ack Of eue Dist ]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
			veh/h	%	veh/h	%	v/c	sec		veh	m				km/h
South	East:	Goerge S	Street												
21	L2	All MCs	61	2.1	61	2.1	0.234	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	56.6
4	T1	All MCs	812	8.4	812	8.4	0.234	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Appro	ach		873	8.0	873	8.0	0.234	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.3
North	East:	Cambridg	je Stree	t											
1	L2	All MCs	59	0.0	59	0.0	0.060	5.8	LOS A	0.2	1.5	0.37	0.57	0.37	48.4
Appro	ach		59	0.0	59	0.0	0.060	5.8	LOS A	0.2	1.5	0.37	0.57	0.37	48.4
North	Nest:	George S	Street												
2	L2	All MCs	4	0.0	4	0.0	0.161	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.4
3	T1	All MCs	597	8.0	597	8.0	0.161	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
29	R2	All MCs	158	2.4	158	2.4	0.323	13.6	LOS A	1.4	10.0	0.73	0.93	0.90	47.4
Appro	ach		759	6.8	759	6.8	0.323	2.9	NA	1.4	10.0	0.15	0.20	0.19	56.7
South	West:	Cambrid	ge Stre	et											
30	L2	All MCs	69	3.6	69	3.6	0.080	6.5	LOS A	0.3	2.0	0.43	0.62	0.43	48.1
Appro	ach		69	3.6	69	3.6	0.080	6.5	LOS A	0.3	2.0	0.43	0.62	0.43	48.1
All Ve	hicles		1761	7.0	1761	7.0	0.323	1.9	NA	1.4	10.0	0.10	0.15	0.11	57.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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# Site: 1 [POST DEV 2024 AM (Site Folder: 1. Cambridge St / George St)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

George Street / Cambridge Street Existing Intersection Configuration

Site Category: NA

Stop (Two-Way) Design Life Analysis (Final Year): Results for 10 years

Vehic	Vehicle Movement Performance														
Mov ID	Turn	Mov Class	Dem F [ Total	nand lows HV ]	Ar Fl [ Total	rival lows HV ]	Deg. Satn	Aver. Delay	Level of Service	95% [ Qu [ Veh.	Back Of Ieue Dist ]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
South	East:	Goerge S	Street	70	ven/m	70	V/C	Sec		ven	111	_	_	_	KIII/II
21	L2	All MCs	56	0.0	56	0.0	0.270	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.8
4	T1	All MCs	957	8.0	957	8.0	0.270	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.5
Appro	ach		1013	7.6	1013	7.6	0.270	0.4	NA	0.0	0.0	0.00	0.03	0.00	59.4
North	East:	Cambridg	je Stree	et											
1	L2	All MCs	63	0.0	63	0.0	0.065	5.9	LOS A	0.2	1.6	0.37	0.57	0.37	48.4
Appro	ach		63	0.0	63	0.0	0.065	5.9	LOS A	0.2	1.6	0.37	0.57	0.37	48.4
North\	Nest:	George S	Street												
2	L2	All MCs	40	0.0	40	0.0	0.185	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.7
3	T1	All MCs	620	16.5	620	16.5	0.185	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.5
29	R2	All MCs	202	0.6	202	0.6	0.499	18.1	LOS B	2.4	17.2	0.83	1.04	1.25	44.8
Appro	ach		863	12.0	863	12.0	0.499	4.5	NA	2.4	17.2	0.20	0.27	0.29	55.2
South	West:	Cambrid	ge Stre	et											
30	L2	All MCs	58	0.0	58	0.0	0.072	6.8	LOS A	0.3	1.8	0.47	0.65	0.47	48.0
Appro	ach		58	0.0	58	0.0	0.072	6.8	LOS A	0.3	1.8	0.47	0.65	0.47	48.0
All Vel	hicles		1997	9.0	1997	9.0	0.499	2.5	NA	2.4	17.2	0.11	0.17	0.15	56.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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# Site: 1 [POST DEV 2024 PM (Site Folder: 1. Cambridge St / George St)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

George Street / Cambridge Street Existing Intersection Configuration

Site Category: NA

Stop (Two-Way) Design Life Analysis (Final Year): Results for 10 years

Vehic	le Mo	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Den F [ Total	nand lows HV ]	Ar Fl [ Total ]	rival lows HV ]	Deg. Satn	Aver. Delay	Level of Service	95% E Qu [ Veh.	Back Of eue Dist ]	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed
Cauth	- a a tu	C	veh/h	%	veh/h	%	V/C	sec	_	veh	m	_	_	_	km/h
South	East:	Goerge S	street												
21	L2	All MCs	61	2.1	61	2.1	0.234	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	56.6
4	T1	All MCs	812	8.4	812	8.4	0.234	0.1	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Appro	ach		873	8.0	873	8.0	0.234	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.3
NorthE	East: (	Cambridg	e Stree	t											
1	L2	All MCs	78	0.0	78	0.0	0.079	5.8	LOS A	0.3	2.0	0.36	0.57	0.36	48.4
Appro	ach		78	0.0	78	0.0	0.079	5.8	LOS A	0.3	2.0	0.36	0.57	0.36	48.4
North	Vest:	George S	Street												
2	L2	All MCs	19	0.0	19	0.0	0.162	5.6	LOS A	0.0	0.0	0.00	0.04	0.00	57.1
3	T1	All MCs	586	8.2	586	8.2	0.162	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
29	R2	All MCs	158	2.4	158	2.4	0.323	13.6	LOS A	1.4	10.0	0.73	0.93	0.90	47.4
Appro	ach		763	6.8	763	6.8	0.323	3.0	NA	1.4	10.0	0.15	0.21	0.19	56.6
South	West:	Cambrid	ge Stre	et											
30	L2	All MCs	69	3.6	69	3.6	0.080	6.5	LOS A	0.3	2.0	0.43	0.62	0.43	48.1
Appro	ach		69	3.6	69	3.6	0.080	6.5	LOS A	0.3	2.0	0.43	0.62	0.43	48.1
All Vel	nicles		1784	6.9	1784	6.9	0.323	2.0	NA	1.4	10.0	0.10	0.16	0.11	57.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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Appendix J – TIA RPEQ Certification and Authorisation

### Certification of Traffic Impact Assessment Report

### **Registered Professional Engineer Queensland**

for

Project Title:	Food and Drink Outlet Development, Corner George Street & Cambridge Street,
	Rockhampton

As a professional engineer registered by the Board of Professional Engineers of Queensland pursuant to the *Professional Engineers Act 2002* as competent in my areas of nominated expertise, I understand and recognise:

- the significant role of engineering as a profession, and that
- the community has a legitimate expectation that my certification affixed to this engineering work can be trusted, and that
- I am responsible for ensuring its preparation has satisfied all necessary standards, conduct and contemporary practice.

As the responsible RPEQ, I certify:

- i) I am satisfied that all submitted components comprising this traffic impact assessment, listed in the following table, have been completed in accordance with the *Guide to Traffic Impact Assessment* published by the Queensland Department of Transport and Main Roads and using sound engineering principles, and
- ii) where specialised areas of work have not been under my direct supervision, I have reviewed the outcomes of the work and consider the work and its outcomes as suitable for the purposes of this traffic impact assessment, and that
- iii) the outcomes of this traffic impact assessment are a true reflection of results of assessment, and that
- iv) I believe the strategies recommended for mitigating impacts by this traffic impact assessment,
- v) embrace contemporary practice initiatives and will deliver the desired outcomes.

Name:	Andrew Barrie	RPEQ No:	12801						
RPEQ Competencies:	Civil	Date:	07 November 2023						
Signature:	JB-ie								
Postal Address:	PO Box 9864, Frenchville QLD 4701								
Email:	andrew.barrie@accesstraffic.com.au								



Traffic impact assessment components to which this certification applies	✓
1. Introduction	
Background	~
Scope and study area	~
Pre-lodgement meeting notes	~
2. Existing Conditions	
Land use and zoning	~
Adjacent land uses / approvals	~
Surrounding road network details	~
Traffic volumes	~
Intersection and network performance	~
Road safety issues	~
Site access	~
Public transport (if applicable)	~
Active transport (if applicable)	~
Parking (if applicable)	~
Pavement (if applicable)	N/A
Transport infrastructure (if applicable)	N/A
3. Proposed Development Details	
Development site plan	~
Operational details (including year of opening of each stage and any relevant catchment / market analysis)	~
Proposed access and parking	✓
4. Development Traffic	
Traffic generation (by development stage if relevant and considering light and heavy vehicle trips)	✓
Trip distribution	$\checkmark$
Development traffic volumes on the network	✓
5. Impact Assessment and Mitigation	
With and without development traffic volumes	$\checkmark$
Construction traffic impact assessment and mitigation (if applicable)	N/A
Road safety impact assessment and mitigation	~
Access and frontage impact assessment and mitigation	~
Intersection delay impact assessment and mitigation	✓
Road link capacity assessment and mitigation	N/A
Pavement impact assessment and mitigation	N/A
Transport infrastructure impact assessment and mitigation	~
Other impacts assessment relevant to the specific development type / location (if applicable)	N/A
6. Conclusions and Recommendations	
Summary of impacts and mitigation measures proposed	~
Certification statement and authorisation	✓

